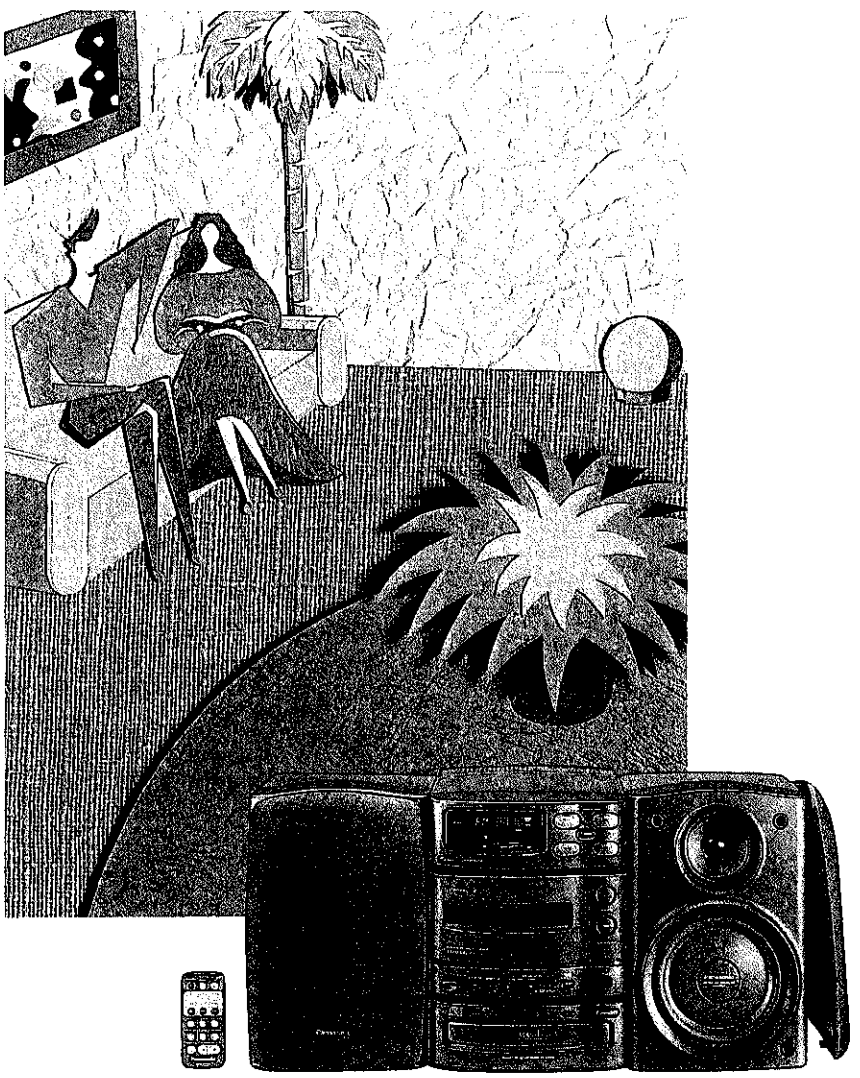
Panasonic

CD Stereo System

SC-CH150

Operating Instructions



Note:
The "EB" indication shown on the outside packing case indicates United Kingdom.
Before connecting, operating or adjusting this product, please read these instructions completely.

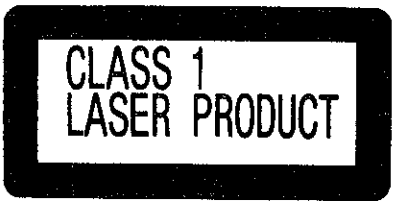
COMPACT disc DIGITAL AUDIO

EB GN

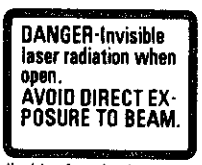
RQT2133-B

Dear Customer

Thank you for purchasing this product.
For optimum performance and safety, please read these instructions carefully.



(Back of product)



(Inside of product)

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.
DO NOT OPEN COVERS AND DO NOT REPAIR YOURSELF. REFER SERVICING TO QUALIFIED PERSONNEL.

This unit employs a lithium battery for back-up of the memory if a power failure occurs, but this battery will no longer provide that back-up if it becomes weak. If battery replacement is necessary, consult with the store where the unit was purchased, or any store where Technics or Panasonic products are sold, or an authorized Service Center. This battery must only be replaced by suitable qualified service personnel.

WARNING
LITHIUM BATTERIES. POSSIBLE EXPLOSION DANGER. CHANGE OF BATTERIES MUST ONLY BE DONE BY QUALIFIED PERSONNEL.

THIS MUSIC SYSTEM IS CAPABLE OF RECEIVING THE NEW AM STEREO BROADCASTS FROM THE AM BAND RADIO STATIONS. HOWEVER LIKE MANY MUSIC SYSTEM CURRENTLY AVAILABLE ON THE MARKET IT WILL REPRODUCE THIS AM STEREO SIGNAL ONLY IN AM MONO, WHICH, IN EFFECT, IS OF NO LESSER QUALITY THAN YOUR EXISTING AM MONO MUSIC SYSTEM.

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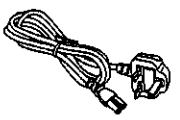
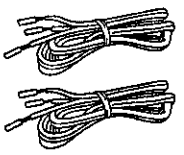
Supplied Accessories

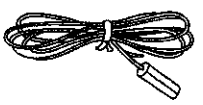
Please check and identify the supplied accessories.



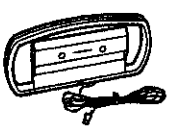
☐ AC power supply cord ..... 1 pc.
(For United Kingdom: VJA0733 or RJA0042-P)
(For Others: RJA0036-K)



☐ Speaker cable ..... 2 pcs.
(REE0499)



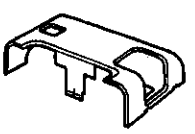
☐ FM indoor antenna ..... 1 pc.
(For United Kingdom: RSA0007)
(For Others: RSA0006)



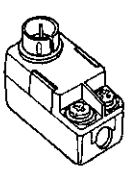
☐ AM loop antenna ..... 1 pc.
(RSA0009)

☐ Remote control transmitter ..... 1 pc.
(RAK-CH910WK)

☐ Lithium battery ..... 1pc.
(CR2025/1P0D)



☐ Rear cover ..... 1 pc.
(RKF0328-K1)



☐ Antenna plug ..... 1 pc.
(For United Kingdom only: RFE0014)

Note

The configuration of the AC power supply cord and FM indoor antenna differ according to the area.

Caution for AC Mains Lead

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

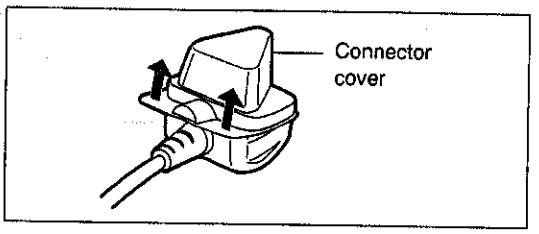
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

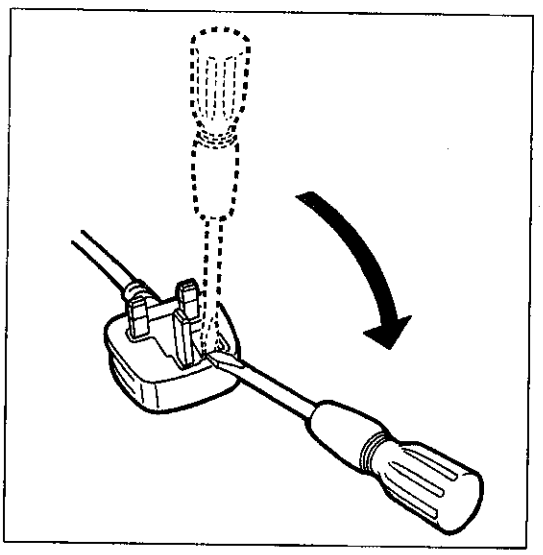
Before use

Remove the connector cover as follows.

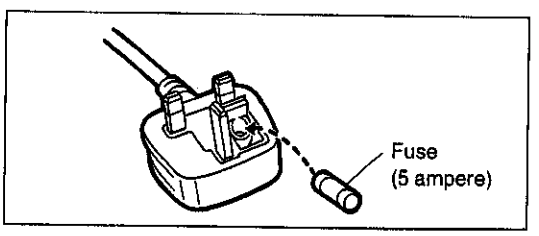


How to replace the fuse

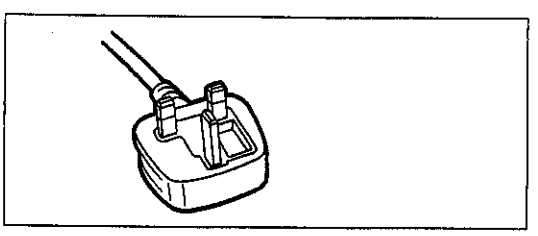
1. Open the fuse cover with a screwdriver.



2. Replace the fuse.



3. Close the fuse cover.



Suggestions for Safety

■ Use a standard AC wall outlet

1. **Use from an AC power source of high voltage, such as that used for an air conditioner, is very dangerous.**
   A fire might be caused by such a connection.
2. **A DC power source cannot be used.**
   Be sure to check the power source carefully, especially on a ship or other place where DC is used.

■ Grasp the plug when disconnecting the power supply cord

1. **Wet hands are dangerous.**
   A dangerous electric shock may result if the plug is touched by wet hands.
2. **Never place heavy items on top of the power supply cord, nor force it to bend sharply.**

■ Place the unit where it will be well ventilated

Place this unit at least 10 cm (4") away from wall surfaces, etc.

■ Avoid places such as the following:

In direct sunlight or in other places where the temperature is high.

In places where there is excessive vibration or humidity.

Such conditions might damage the cabinet and/or other component parts and thereby shorten the unit's service life.

■ Be sure to place the unit on a flat, level surface

If the surface is inclined, a malfunction may result.

■ Never attempt to repair nor reconstruct this unit

A serious electric shock might occur if this unit is repaired, disassembled or reconstructed by unauthorized persons, or if the internal parts are accidentally touched.

■ Take particular care if children are present

Never permit children to put anything, especially metal, inside this unit. A serious electric shock or malfunction could occur if articles such as coins, needles, screwdrivers, etc. are inserted through the ventilation holes, etc. of this unit.

■ If water is spilled on the unit

Be extremely careful if water is spilled on the unit, because a fire or serious electric shock might occur. Immediately disconnect the power cord plug, and consult with your dealer.

■ Avoid spray-type insecticides

Insecticides might cause cracks or "cloudiness" in the cabinet and plastic parts of this unit. The gas used in such sprays might, moreover, be ignited suddenly.

■ Never use alcohol or paint thinner

These and similar chemicals should never be used, because they might cause flaking or cloudiness of the cabinet finish.

■ Disconnect the power supply cord if the unit will not be used for a long time

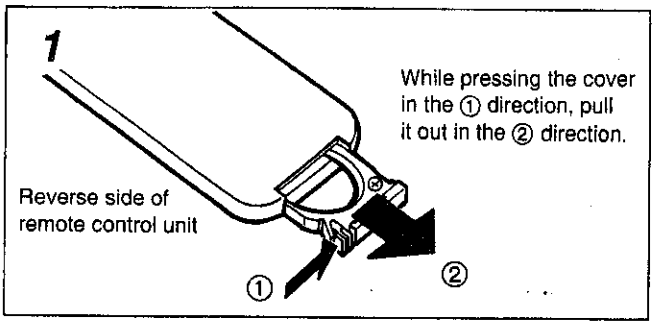
If the unit is left for a long time with the power ON, this not only will shorten its useful operation life, but also may cause other trouble.

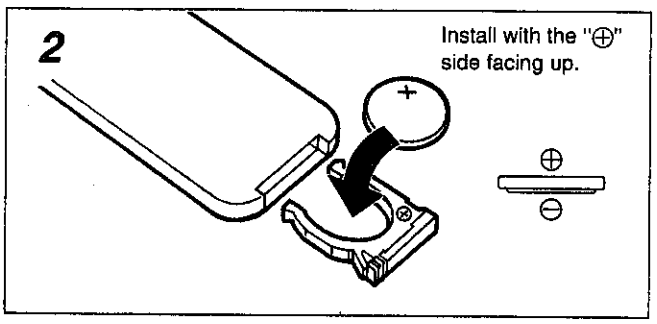
■ If trouble occurs

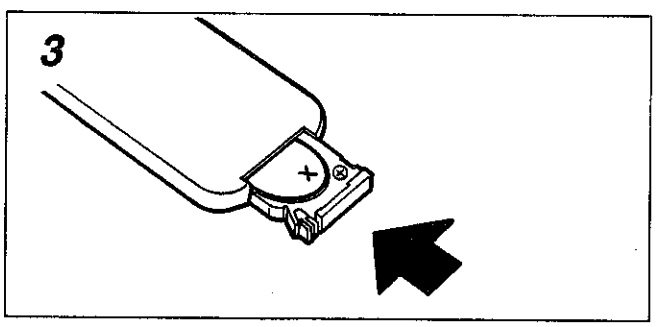
If, during operation, the sound is interrupted or indicators no longer illuminate, or if an abnormal odour or smoke is detected, immediately disconnect the power cord plug, and contact with your dealer or an Authorized Service Center.

Concerning the Remote Control

Installing the lithium battery







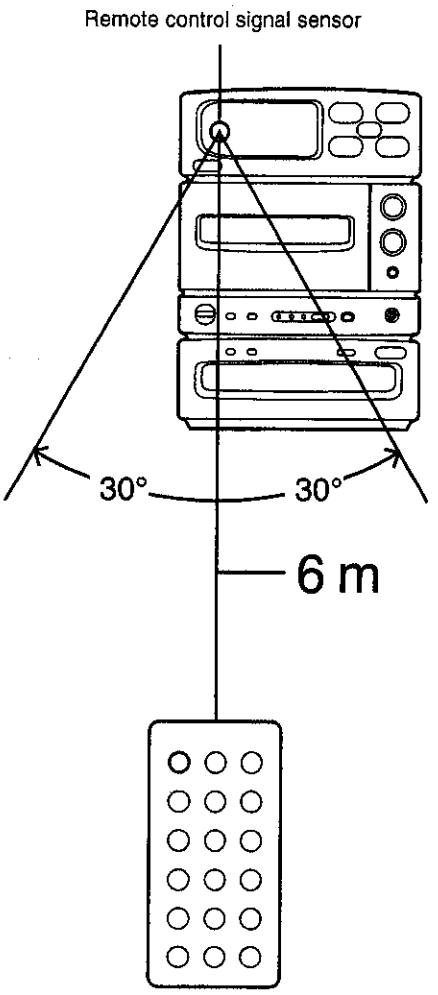
To prevent damage to the lithium battery and electrolyte leakage:

- Install the battery with the "⊕" and "⊖" polarities aligned properly.
- Remove the lithium battery if you do not intend to use the remote control unit for a long time.
- Do not throw a lithium battery into a fire, subject it to short-circuiting, disassemble it or apply heat to it.

The average life of a lithium battery is about one year.

It is time to replace the battery when the remote control unit will not function even when it is operated close to the system.

Remote control unit's operation range



How to use the remote control unit properly:

- Do not place obstacles between the remote control signal sensor and remote control unit.
- Do not expose the remote control signal sensor to direct sunlight or to the bright light of an invertor fluorescent light.
- Take care to keep the remote control signal sensor and end of the remote control unit free from dust.

To prevent malfunctioning of the remote control unit:

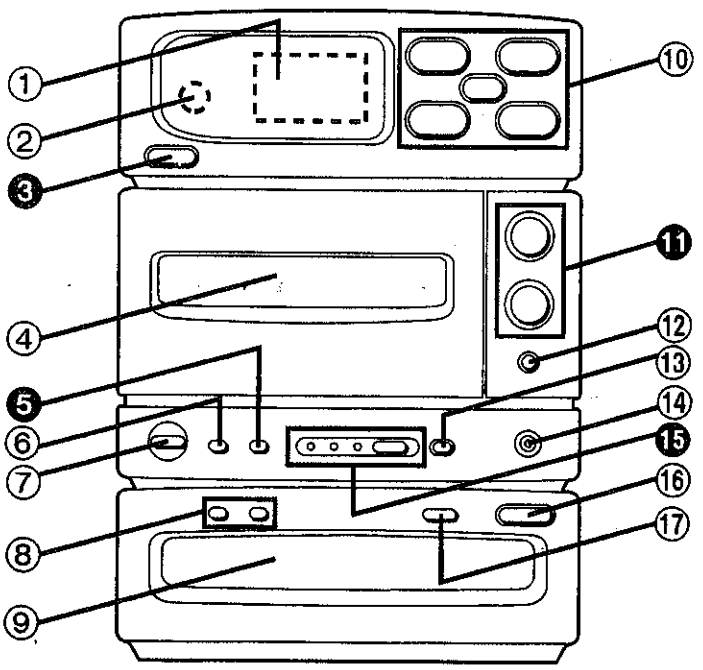
- Do not disassemble or remodel the unit.
- Do not place heavy objects on top of it.
- Do not leave it where it will be exposed to direct sunlight.
- Do not spill beverages or other liquids over it.

Note

When the system is installed in a rack, the distance over which the remote control unit can be operated may be reduced depending on the thickness and color of the rack's glass doors.

Front Panel Controls

The buttons indicated by the white numbers on the black ground (for example, ❸) can also be activated from the remote control unit.

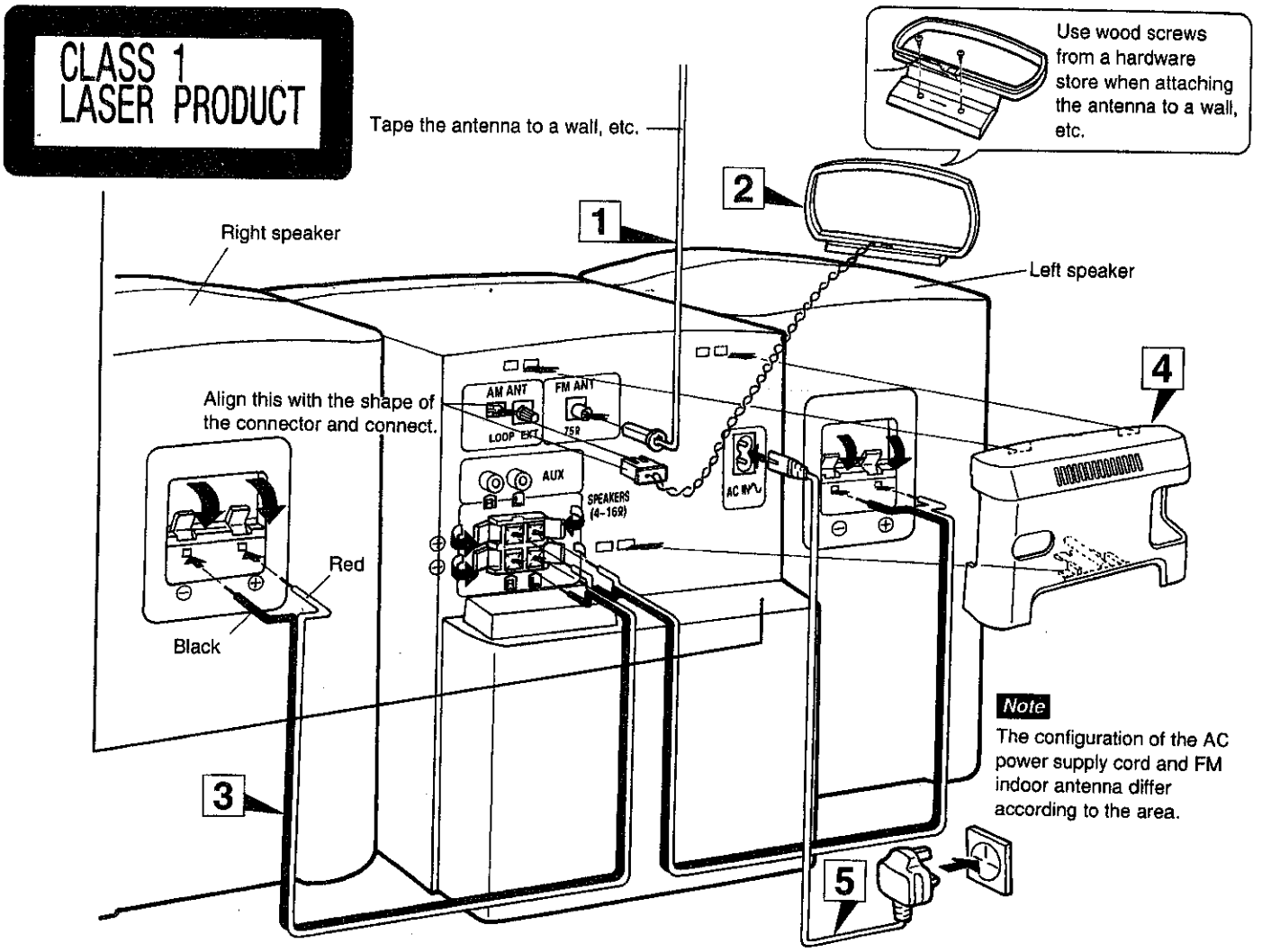


No.	Name	Ref. page
①	**Display**	*10*
②	**Remote control signal sensor (SENSOR)**	*6*
❸	**Power "standby ⏻/ON" switch (POWER, STANDBY ⏻/ON)** Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.	*10*
④	**Cassette holder**	*20*
❺	**Tape travel button (DIRECTION)**	*20*
⑥	**Dolby NR ON/OFF button (DOLBY NR)**	*20, 24*
⑦	**Eject button (EJECT)**	*20*
⑧	**Tape length input buttons (TAPE LENGTH)**	*24*
⑨	**Disc tray**	*16*

No.	Name	Ref. page
⑩	**Key operation section (5-KEY OPERATION)**	*10*
❶❶	**Volume controls (VOLUME)**	*14*
⑫	**Timer ON/OFF button (⏲ PLAY/⏲ REC)**	*34*
⑬	**Recording start/stop button (REC , START/STOP)**	*24*
⑭	**Headphones jack (PHONES)**	*22*
❶❺	**Sound menu button and indicators/ Beep on/off button (SOUND MENU, –BEEP OFF/ON)** Beep on/off function is available only on the main unit.	*22*
⑯	**Disc tray open/close button (OPEN/CLOSE)**	*16*
⑰	**CD edit button (EDIT)**	*24*

Connections

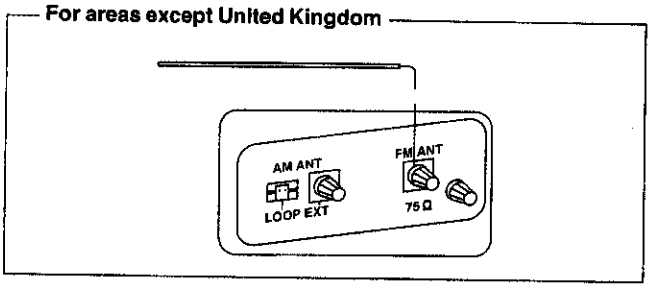
Connecting the accessories



1 Connect the FM indoor antenna.

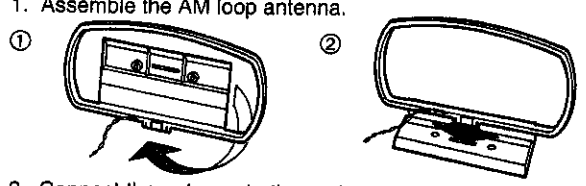
Find a position on a wall or other surface where there is minimal noise during reception and tape the antenna at that position. If the noise level is high, it is recommended that an outdoor antenna be installed. (See page 9.)

For areas except United Kingdom



2 Connect the AM (MW/LW) loop antenna.

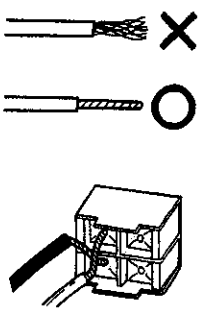
1. Assemble the AM loop antenna.



2. Connect the antenna to the system.
3. Find a position such as the top of the system or the area behind a shelf where there is minimal noise during reception and place the antenna at that position.

3 Connect the speaker cables.

1. Twist the center conductor. If its strands have become unraveled, twist them tight again.
2. Connect the cables to the speakers. Connect each of the cables to the speaker terminal lever with the same color.
3. Connect the cables to the system. To prevent malfunctioning, do not short-circuit the conductors.



4 Connect the rear cover.

Poke the antenna cables through the hole in the left side of the cover, and speaker cables through the hole in the bottom of the cover.

FOR UNITED KINGDOM ONLY
BE SURE TO READ THE CAUTION FOR AC MAINS LEAD ON PAGE 4 BEFORE PROCEEDING TO STEP 5.

5 Connect the AC power supply cord.

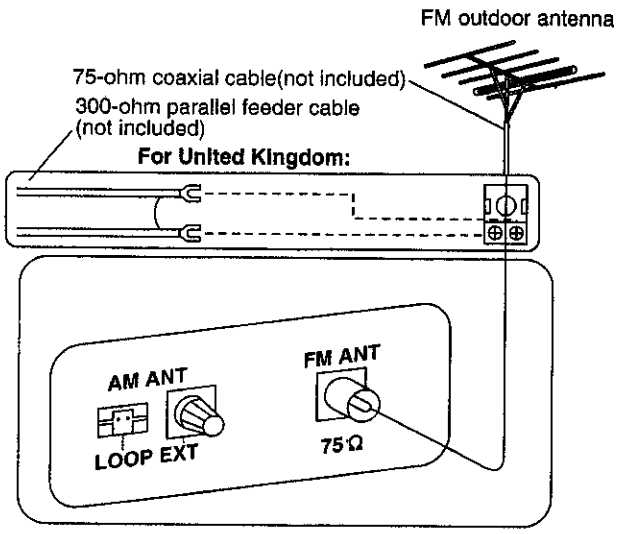
Connect this cable last of all through the hole in the right side of the rear cover.

Connecting an outdoor antenna

FM outdoor antenna (not included)

Disconnect the FM indoor antenna.

Two types of cable are most commonly used for connection from the antenna: 300-ohm parallel feeder cable or 75-ohm coaxial cable. For best resistance to external interference noise, we recommend you to use the 75-ohm coaxial cable.



■ How to use the antenna plug (included)

(For United Kingdom)

Two types of wire are most commonly used for connection from the antenna: 300-ohm parallel feeder cable or 75-ohm coaxial cable. For best resistance to outside interference, the use of 75-ohm coaxial cable is suggested.

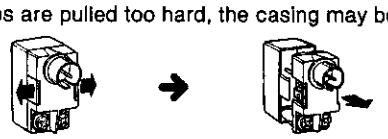
To connect a 75-ohm coaxial cable

① Remove a piece of the outer vinyl insulator.

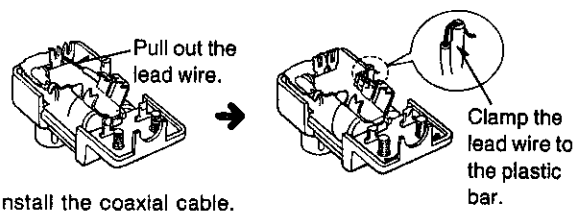
② Remove the cover while pulling the tabs.

Note:

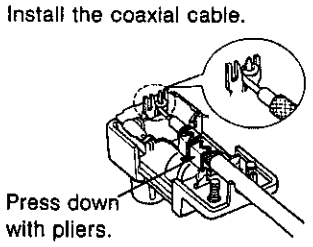
If the tabs are pulled too hard, the casing may be damaged.



③ Remove the lead wire and clamp it with the plastic bar.

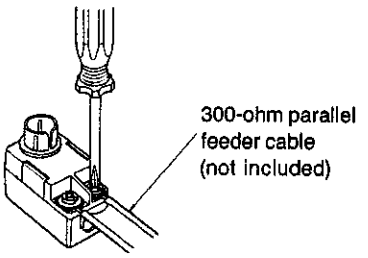


④ Install the coaxial cable.



⑤ Attach the cover.

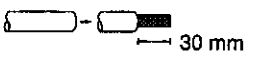
To connect a 300-ohm parallel feeder cable

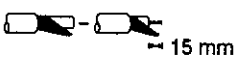


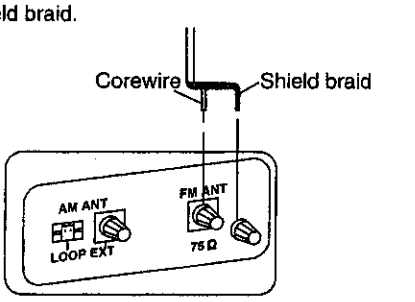
Loosen the screw to connect the feeder wire and tighten it to secure the connection.

For areas except United Kingdom

1. Remove a piece of the outer vinyl sheath from the end of the cable.
2. Bundle the shield braid, and remove a piece of the inner vinyl sheath covering the core wire.
3. Connect the core wire and the shield braid.

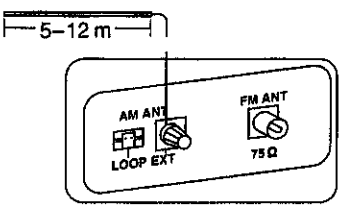






AM (MW/LW) outdoor antenna (vinyl-covered wire, not included)

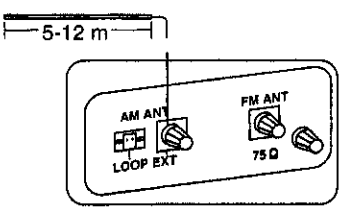
This antenna is required in areas between mountains, inside reinforced concrete buildings or other locations where the broadcast signals are weak. Install the antenna along a window, etc.



Note

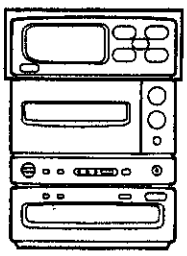
Do not disconnect the AM loop antenna.

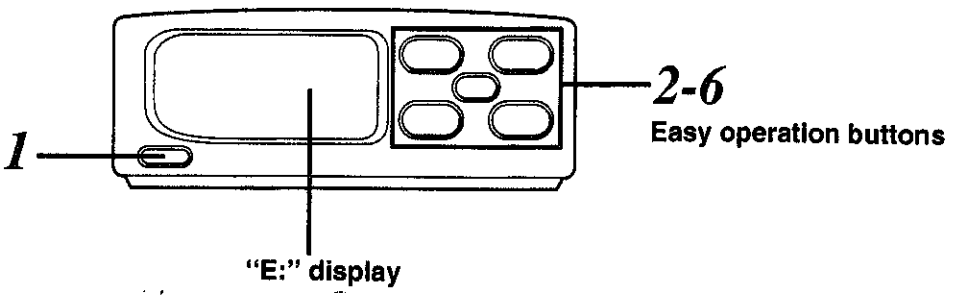
For areas except United Kingdom



Setting the Time of Day

This is a 24-hour display clock.

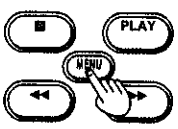




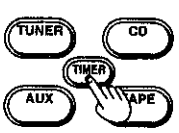
Example: Setting to 18:25;

1

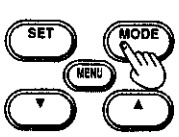
Press POWER.
When the easy operation buttons shows same as at step 3, you can skip step 2.

2 

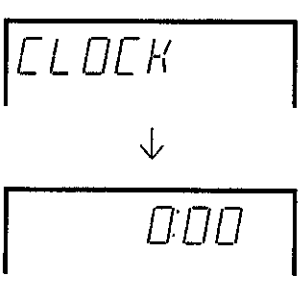
Press MENU.

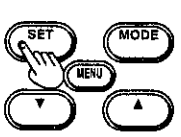
3 

Press TIMER.

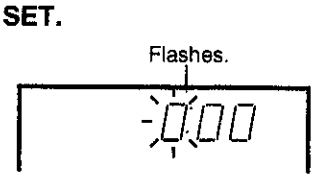
4 

Press MODE once to display "CLOCK".

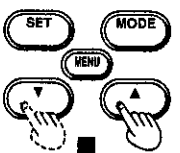




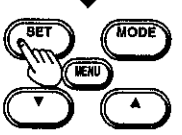
Within 4 seconds or so:
Press SET.



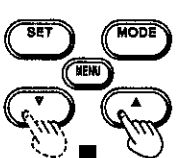
When the display returns to the clock display, press MODE again to display "CLOCK".

5 

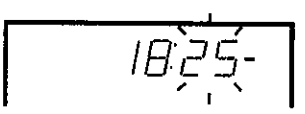
Press ▼ or ▲ to set the hours.

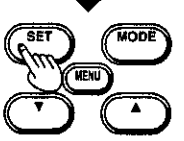


Press SET.

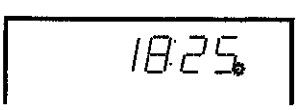
6 

Press ▼ or ▲ to set the minutes.





Press SET.
The clock now starts.



"E:" appears on the display when:

- The power cable is connected to the power outlet for the first time.
- A power failure has occurred.

Follow the procedure above to set the time.

To display the clock when playing the source:

1. Press MENU.
2. Press TIMER.

The clock display now appears.

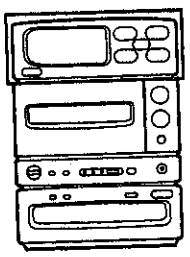
For your reference:

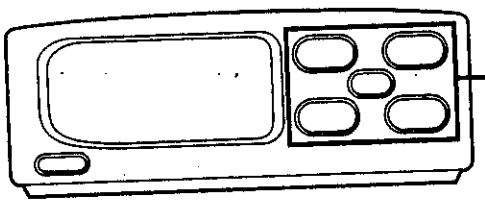
The hour digit or digits will not be incremented by one even when the minute digits are changed from 59 to 00.

Memory Presetting

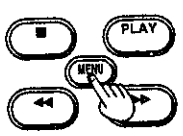
If broadcast frequencies are preset in the memory, you can easily tune in any of these frequencies from the system or remote control unit. (Up to 12 stations can each be set in the FM, MW and LW bands.)

Automatic station presetting (auto memory)

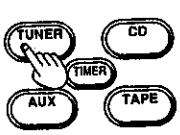




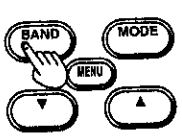
Example: Presetting stations in the FM band;

1 

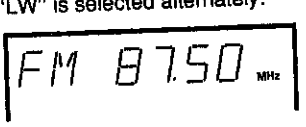
Press MENU.

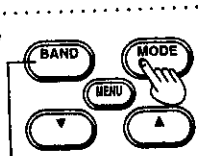
2 

Press TUNER.

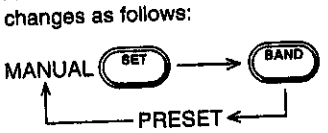
3 

Press BAND to select "FM".
Each time this button is pressed "FM", "MW" or "LW" is selected alternately.

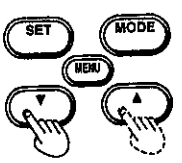


4 

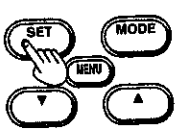
Press MODE to select "MANUAL". (The button display— SET .)
Each time this button is pressed, the display changes as follows:



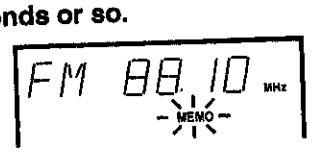
When you select "MANUAL", the button display change over between "SET" and "BAND".

5 

Press ▼ or ▲ to locate the lowest frequency in the band.
FM: 87.50 MHz (0.05 MHz steps)
MW: 522 kHz (9 kHz steps)
530 kHz (10 kHz steps)
LW: 144 kHz (9 kHz steps)

6 

Keep SET depressed for 3 seconds or so.



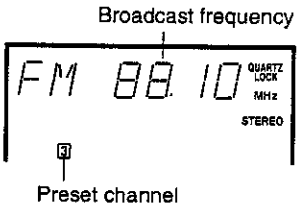
Release the button as soon as "MEMO" starts flashing.
Repeat these steps for all the stations whose programs you want to listen to.
When this presetting is completed, "MEMO" goes off and the station preset last is tuned in.

To preset stations in the MW or LW band:

1. Perform steps 1 and 2.
2. Select "MW" or "LW" in step 3.
3. Performs steps 4 to 6.

To confirm which stations have been preset:

1. Press MODE to select "PRESET".
2. Press ▼ or ▲.



Notes

- When another station is preset in a channel with a station already preset, the previous station will be cleared.
- While making auto memory presetting, do not press any other buttons on the unit.

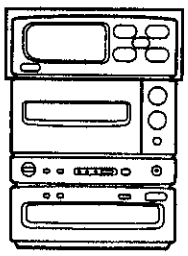
Memory retention:

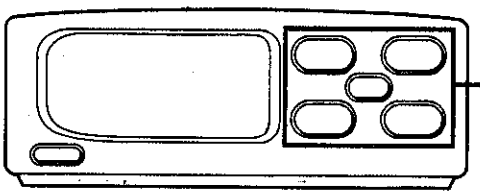
The presettings will be retained by the memory for about 2 weeks if the power cable is left disconnected.

Preset the stations manually in the following cases:

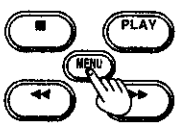
- When auto memory presetting is not possible due to weak signals, etc.
- When the signals are so strong that frequency shifts

Manual station presetting (manual memory)

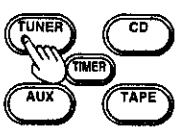




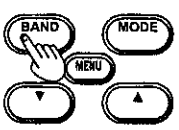
Example: Presetting FM 88.10 MHz in preset channel 3;

1 

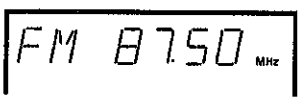
Press MENU.

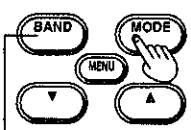
2 

Press TUNER.

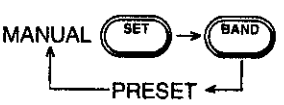
3 

Press BAND to select "FM".
Each time this button is pressed "FM", "MW" or "LW" is selected alternately.

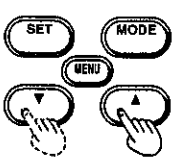


4 

Press MODE to select "MANUAL". (The button display— SET .)
Each time this button is pressed, the display changes as follows:

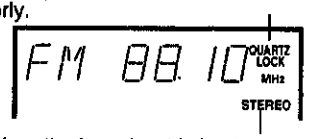


When you select "MANUAL", the button display change over between "SET" and "BAND".

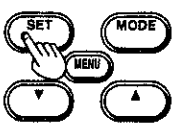
5 

Press ▼ or ▲ to tune in the station.

Lights when the station has been tuned in properly.

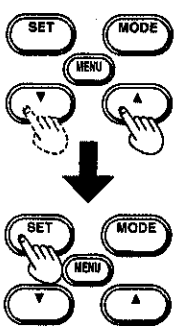


Lights when the broadcast is in stereo.

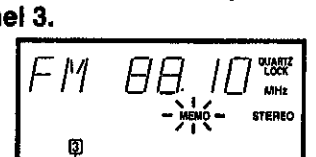
6 

Press SET.

Flashes.

7 

Press ▼ or ▲ to select preset channel 3.



Preset channel

While MEMO flashes:
Press SET.

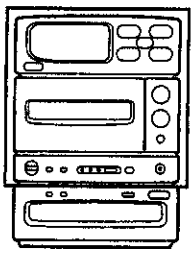
To preset other stations, repeat steps 5 to 7.

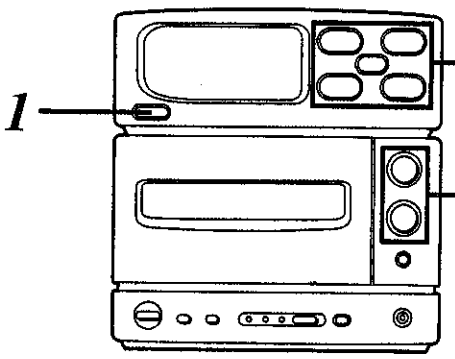
To preset stations in the MW or LW band:

1. Perform steps 1 and 2.
2. Select "MW" or "LW" in step 3.
3. Performs steps 4 to 7.

Listening to Radio Broadcasts

Manual tuning (when stations have not been preset)

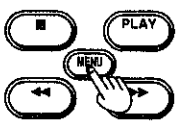




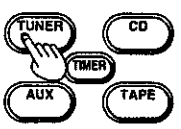
Example: Tuning in FM 88.10 MHz;

1

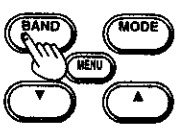
Press POWER.
When the easy operation buttons shows same as at step 4, you can skip steps 2 and 3.

2 

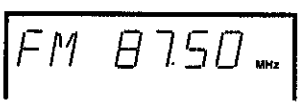
Press MENU.

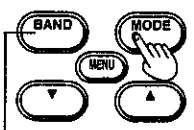
3 

Press TUNER.

4 

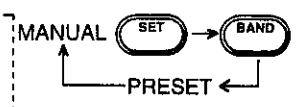
Press BAND to select "FM".
Each time this button is pressed "FM", "MW" or "LW" is selected alternately.

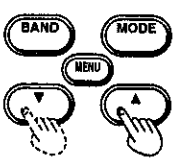


5 

Press MODE to select "MANUAL". (The button display— BAND .)
Each time this button is pressed, the display changes as follows:

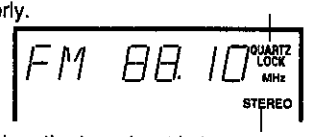
When you select "MANUAL", the button display change over between "SET" and "BAND".



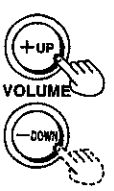
6 

Press ▼ or ▲ to tune in the station.

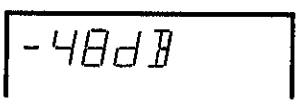
Lights when the station has been tuned in properly.



Lights when the broadcast is in stereo.

7 

Press VOLUME to set the desired volume level.



Automatic tuning:

Keep ▼ or ▲ depressed for about 1 seconds. The first station is picked up and the tuning stops automatically.

- If the buttons are not released even when the display starts to move, the tuning will not stop automatically even if stations are picked up.
- Ambient interference may cause the tuning to stop without picking up any stations.

To stop tuning at any time:
Press the button again.

Frequency steps:

The frequency changes in the following steps:
0.05 MHz steps for FM
9 kHz or 10 kHz steps for MW
9 kHz steps for LW

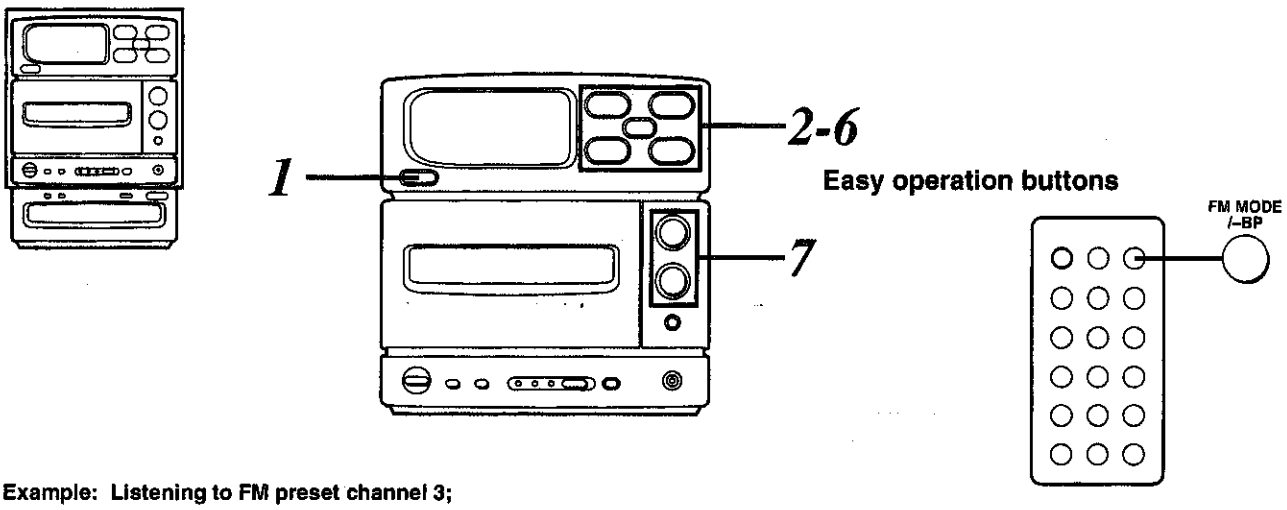
MW allocation settings:

This unit comes equipped with an electronic digital tuner that divides the broadcast band into many small steps. These steps match the assignable broadcast frequencies and intervals in between.
Each country allocates (assigns) broadcast bands according to their particular needs.
By adjusting the allocation, you can enable this tuner to receive MW broadcasts allocated in 10 kHz steps.

1. Perform steps 1–3.
2. Select "MW" in step 4.
3. Press and hold BAND for approximately 3 seconds.

To return to the original indication, repeat steps 1 to 3 above.

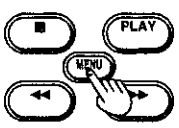
Listening to preset stations (preset tuning)



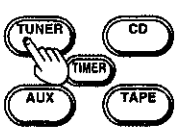
Example: Listening to FM preset channel 3;

1

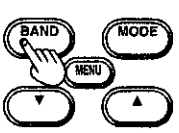
Press POWER.
When the easy operation buttons shows same as at step 4, you can skip steps 2 and 3.

2 

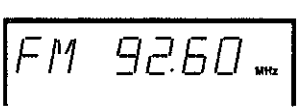
Press MENU.

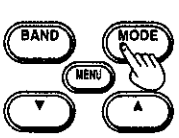
3 

Press TUNER.

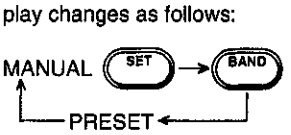
4 

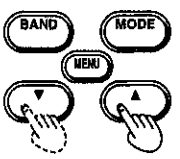
Press BAND to select "FM".
Each time this button is pressed "FM", "MW" or "LW" is selected alternately.



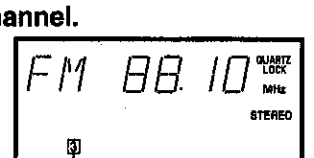
5 

Press MODE to select "PRESET".
Each time this button is pressed, the display changes as follows:

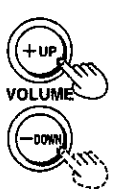


6 

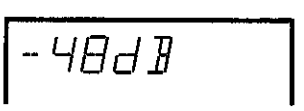
Press ▼ or ▲ to select the preset channel.



Preset channel

7 

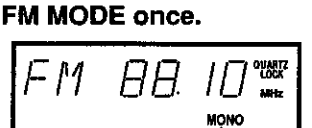
Press VOLUME to set the desired volume level.



When noise interferes with FM stereo reception:

(Available only from the remote control)

Press FM MODE once.



Lights.

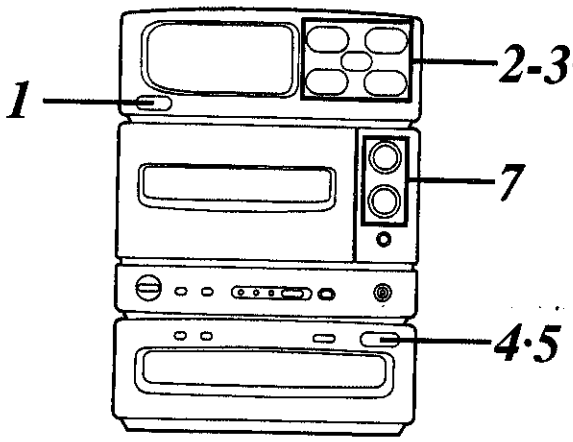
The noise is reduced, making it easier to listen to the program.

Note

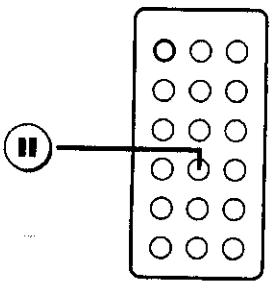
You cannot preset FM stations in monaural mode.

Listening to Compact Discs

Sequential play

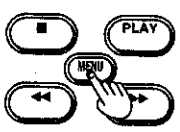


Easy operation buttons

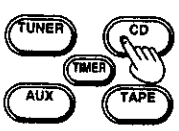


1

Press POWER.
When the easy operation buttons shows same as at step 6, you can skip steps 2 and 3.

2 

Press MENU.

3 

Press CD.

This indicates that a CD has not been installed.

4

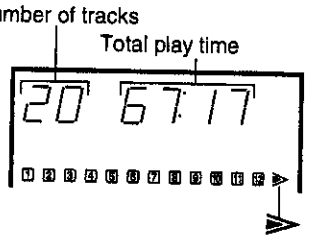
Press OPEN/CLOSE and insert the CD with the label surface facing up.

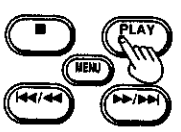
An adaptor for CD singles is not required.

5

Press OPEN/CLOSE to close the tray.

Total number of tracks
Total play time



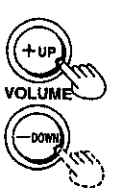
6 

Press PLAY.

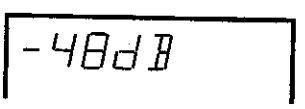
Track number now playing

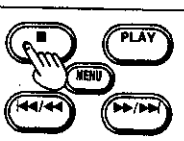
Elapsed time of track

Play continues in the original track order from track no. 1 to the final track and then stops automatically.

7 

Press VOLUME to set the desired volume level.





To stop play at any time:
Press ■.

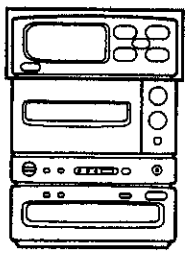
To stop play temporarily:
(Available only from the remote control)
Press ❚❚.

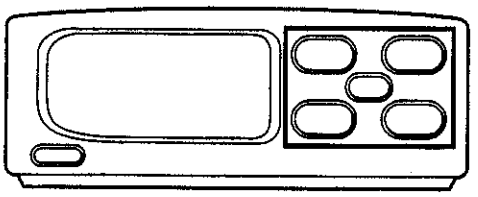
To play the disc again, press PLAY on the system or CD on the remote control.

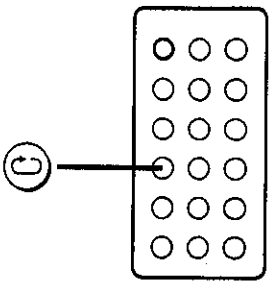
Total play time indicated:
The total play time including the gaps between the tracks is indicated. This is why the time may be several seconds longer than the figure given in the liner notes, etc.

When ➢ appears:
This indicates that the CD has 13 or more tracks.

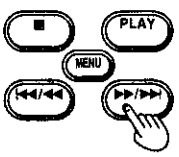
For your reference:
- When a CD is installed and PLAY is pressed, the tray closes automatically and play begins.
- When CD play is switched midway through to the radio or tape play, CD play will stop automatically.



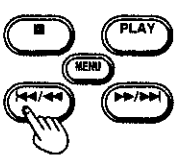




Skipping tracks (skip function)



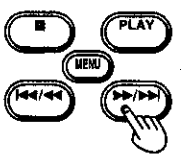
To skip forward:
Press ▶▶/▶▶| .
You can skip as many tracks ahead as the number of times you press the button.
During play:
Tracks are skipped and play commences.
During pause:
Tracks are skipped and operation stops.
During stop:
You can skip to the beginning of the desired track. (The display will return to the previous setting in 5 seconds.)



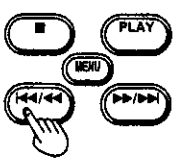
To skip backward:
Press |◀◀/◀◀ .
You can skip back to the beginning of the track being played.
During play:
When the button is pressed once, the pickup moves to the beginning of the track being played.
When it is tapped repeatedly, the pickup skips as many tracks as the number of times you press the button, and play commences.
During pause:
Tracks are skipped and operation stops.
During stop:
You can skip back to the beginning of the desired track. (The display will return to the previous setting in 5 seconds.)

For your reference:
During program play, the number of tracks will be skipped in the forward or backward direction in the order in which the tracks have been programmed.

Searching tracks (search function)



To search forward during play:
Press and hold ▶▶/▶▶| .
Release the button when you have arrived at the desired position.



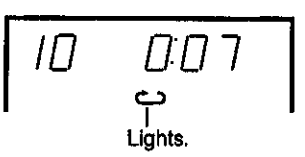
To search backward during play:
Press and hold |◀◀/◀◀ .
Release the button when you have arrived at the desired position.

For your reference:
During program play, the search will extend only to the beginning or end of the track being played.

To repeat play (repeat function)

(Available only from the remote control)

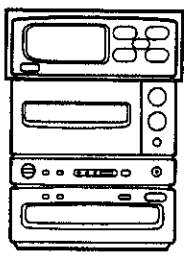
Press ↻ before or during play.

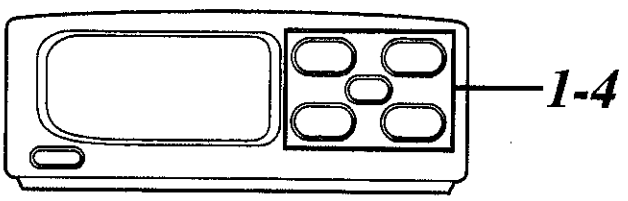


To release:
Press the button again.

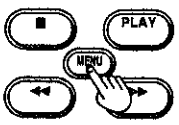
For your reference:
- During program play only the programmed tracks will be played repeatedly.
- When only one track has been programmed, the same track can be heard over and over again.

Starting play from a desired track

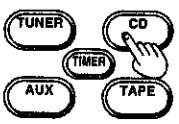




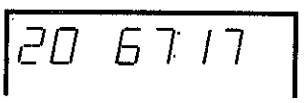
Example: Starting play from track no. 8;

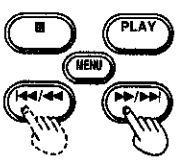
1 

Press MENU.

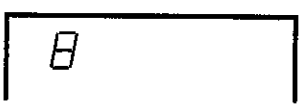
2 

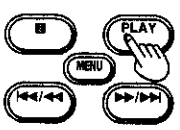
Press CD.



3 

Press ▶▶/▶▶| or |◀◀/◀◀ to select the desired track.



4 

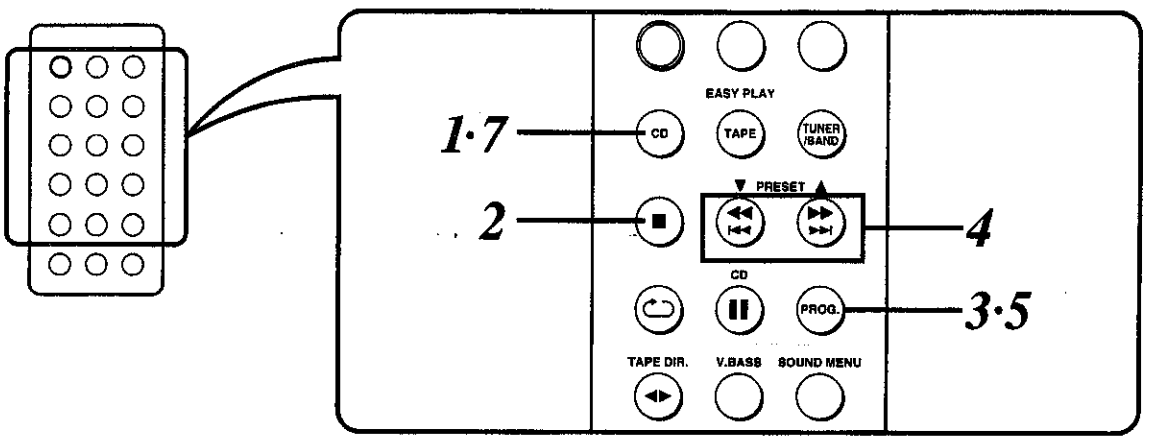
Within 5 seconds:
Press PLAY.

All the tracks are played in the original track order starting with the one selected and ending with the final track, and then play stops automatically.

Listening to programmed tracks (program play)

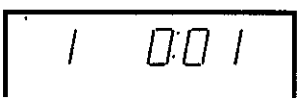
(Available only from the remote control)

Up to 18 tracks can be programmed.



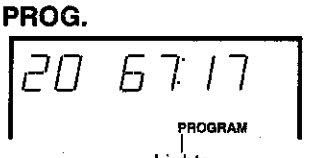
Example: Programming tracks 8, 1 and 5 in this order;

1 **Press CD.**



2 **Press ■.**

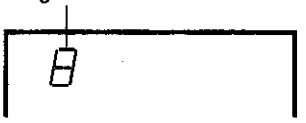
3 **Press PROG.**



Lights.

4 **Press ▶▶| or |◀◀ to select the desired track.**

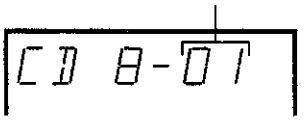
Programmed track number



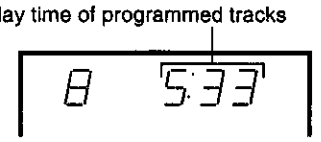
5 **Within 5 seconds or so, Press PROG.**

The programming is now entered.

Programmed track sequence



Total play time of programmed tracks



6 **Repeat steps 4 and 5 to program the other tracks.**

7 **Press CD.**

When the programmed tracks have all been played, play stops automatically.

To release the program play function:

Press PROG. in the stop mode.
This function is released by pressing ■ even while play has stopped.

When "FULL" appears on the display:

This indicates that an attempt has been made to program more than 18 tracks. No more than 18 tracks can be programmed.

When "––:––" appears on the display:

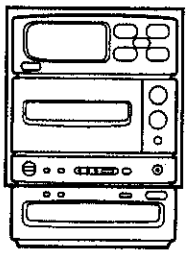
This indicates that the total play time of the programmed tracks exceeds 99 minutes and 59 seconds.
However, program play is still possible.

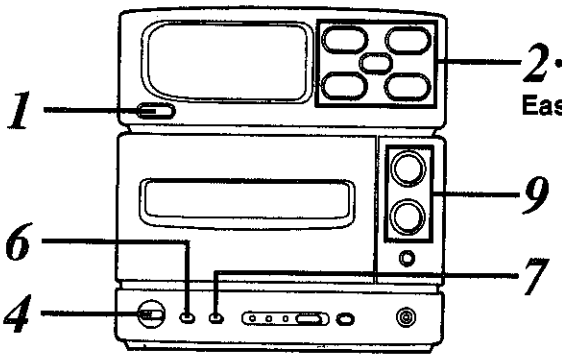
For your reference:

- What has been programmed is retained in the memory until cleared. Unless the disc tray is opened or closed, the programming will be retained even when play is stopped or the power is switched off.
- The programming is retained for about 2 weeks when the power cord is disconnected.

Listening to Tapes

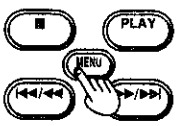
Normal, chrome and metal tapes can be used.



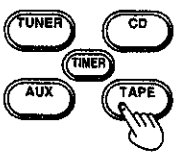


1

Press POWER.
When the easy operation buttons shows same as at step 8, you can skip steps 2 and 3.

2 

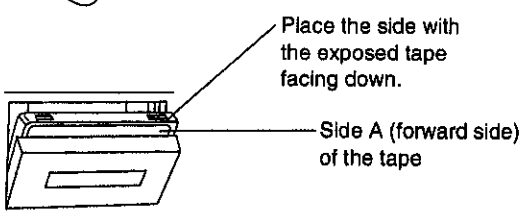
Press MENU.

3 

Press TAPE.

4

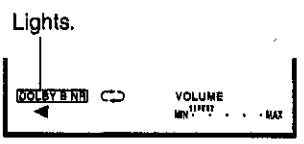
Press EJECT and insert the tape.



5 **Close the holder.**

6

Press DOLBY NR to set the Dolby NR system on or off.



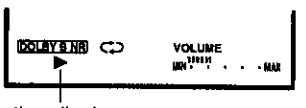
This should be off when the recording has not been made using the Dolby NR system.

7

Press DIRECTION to select the tape travel direction.

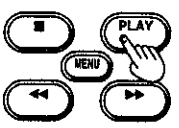
▶: Tape play starts with the forward side of the tape.

◀: Tape play starts with the reverse side of the tape.

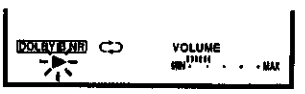


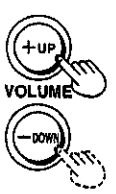
Tape direction display

To start play from the reverse side, take up the tape onto the other reel before playback.

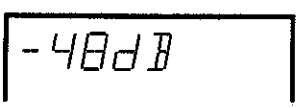
8 

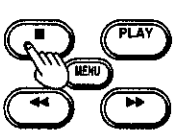
Press PLAY.
Play is repeated until ■ is pressed.



9 

Press VOLUME to set the desired volume level.

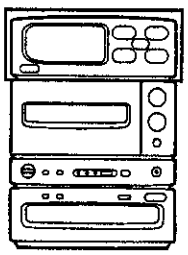




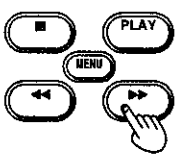
To stop playback at any time:
Press ■.

For your reference:
When tape play is switched midway through to the radio or CD play, tape play will stop automatically.

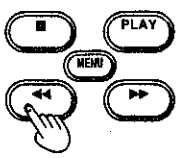
To find the start of a program during playback



[When ▶ (forward side) appears as the tape direction]



To skip to the start of the next program during playback:
Press ▶▶.



To skip to the start of the program being played:
Press ◀◀.

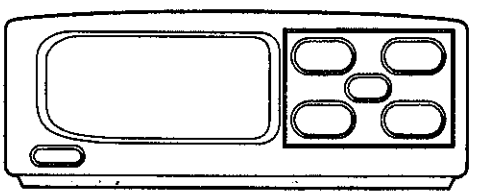
Press the reverse button to that indicated in the text when ◀ (reverse side) appears as the tape direction.

Note

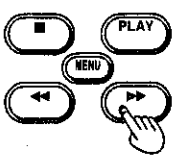
The unrecorded intervals between the programs are used to search for programs. This function may therefore not operate properly in the following situations:

- When the unrecorded intervals between programs are less than 4 seconds long
- When there is no dead space on the tape (because the recording has been made from a microphone, etc.)
- When there are parts recorded at a very low level or silent passages during a program (classical music, etc.)
- When less than 10 seconds have elapsed since the beginning of the program or when less than 10 seconds remain until the start of the next program
- When a tape has been recorded with fade-ins and fade-outs

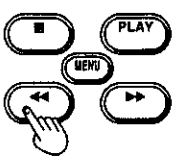
To fast forward or rewind the tape



[When ▶ (forward side) appears as the tape direction]



To fast forward the tape in the stop mode:
Press ▶▶.

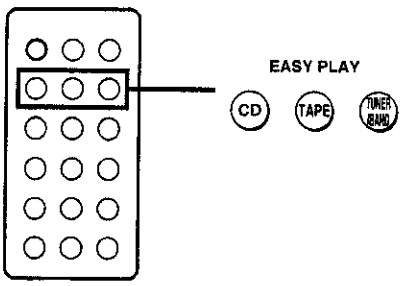


To rewind the tape in the stop mode:
Press ◀◀.

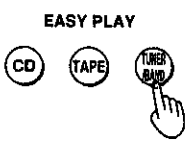
Press the reverse button to that indicated in the text when ◀ (reverse side) appears as the tape direction.

One-Touch Playback

(Available only from the remote control)



If a CD or tape is already installed, the power is turned on and play begins automatically from the power-standby condition simply by pressing a button.



To listen to the radio:
Press TUNER/BAND.
The radio receives the station which was last received.

To listen to a CD:
Press CD.
Play starts from track #1.

To listen to a tape:
Press TAPE.
Playback starts from the tape side which was last played.

Volume level heard during play:

The sound of the program or track is faded in (it gradually becomes louder) to the level set before the power was turned off.

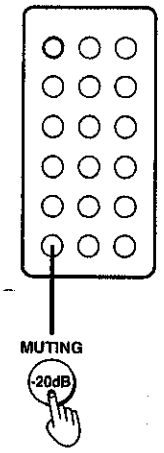
Note

Fade-in does not occur when the power was already on.

Handy Functions

To temporarily reduce the volume level (muting)

(Available only from the remote control)



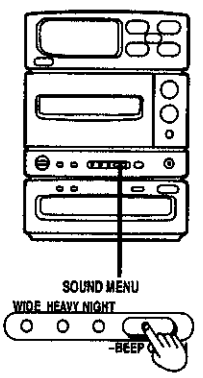
Press MUTING.
This comes in handy when you need to answer a telephone call, for instance.

Lights.

To release the muting:

- Press MUTING again.
- Reduce the volume, set to "– – dB" and then set the desired volume level.

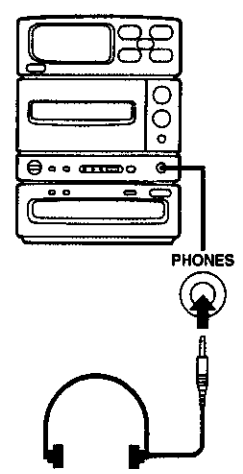
To turn off the operating beep tone



Keep –BEEP depressed for about 2 seconds.
A beep is heard, indicating that the beep tone has been turned off.

To turn the beep back on:
Keep –BEEP depressed again.

To listen through headphones (not included)



- Turn down the volume before connecting the headphones.
- Avoid listening for prolonged periods of time to prevent hearing damage.
- Plug type used: Stereo mini

Be sure not to prevent the compact disc tray from opening or closing.

Before Making a Recording

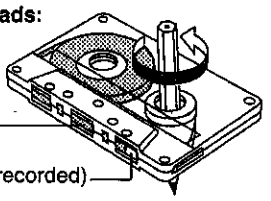
Notes on tapes:

Normal, chrome and metal tapes can be used (for recording and playback).

- This system automatically identifies the type of tape being used and sets the bias (for recording) and equalizer.
- The recording level is set automatically.

Run the leader tape past the heads and set up the system so that recording can be commenced immediately. (This is not necessary when edit-recording CD tracks.)

How to run the leader tape past the heads:



When "ERROR" appears on the display during recording operation:

It means that the tape is not installed, or you install the tape which has no erasure prevention tabs.

Using Dolby NR reduces tape hiss in the high-frequency range. It boosts the level of the high-frequency program content during recording, and lowers it by the same amount during playback, simultaneously reducing high-frequency noise incurred during the recording process.

B type:
Noise is reduced to about 1/3. Use this type when playing a tape in the Dolby NR mode.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

Note

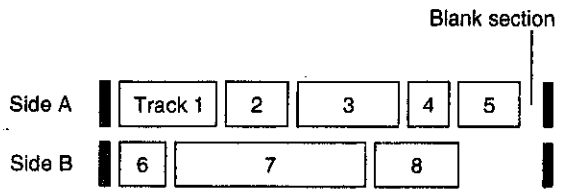
If you record with your desired sound field or tone quality, it is not effective to the recorded sound.

Notes on CD recording methods:

There are 3 methods. Choose the one that best suits your needs.

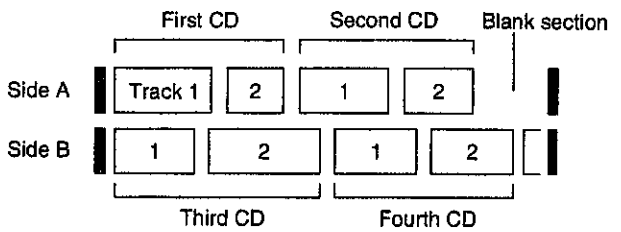
To edit tracks on a CD in their original sequence (see pages 24–25)

- Tracks are not interrupted at the end of the tape.
- A blank section can be left at the end of the tape.



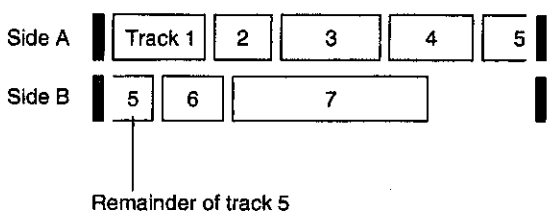
To edit a collection of CD singles on one tape (see page 26)

- This function can be used to record further tracks on the part of the tape which is still free after all the tracks of a CD have been recorded.
- Tracks are interrupted at the end of the tape side B.
- A blank section can be left at the end of the tape side A.



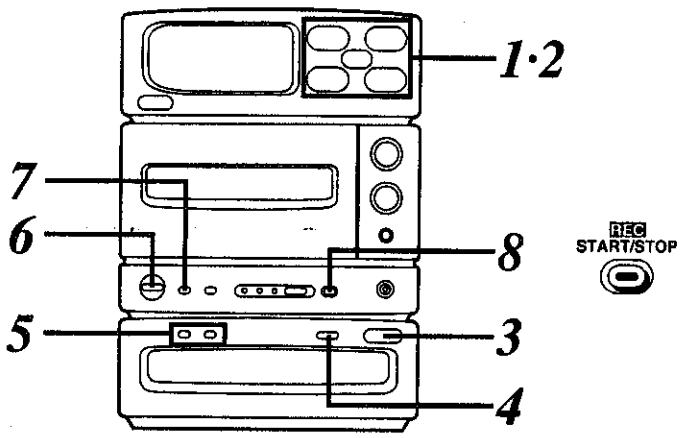
To record tracks without the editing function (see pages 28–29)

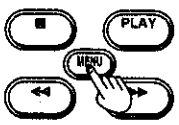
- This function can be used to record from midway through a previously recorded tape.
- Tracks are interrupted at the end of the tape.
- A blank section cannot be left at the end of the tape.



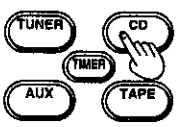
Editing CD tracks in their original order

Up to 36 tracks can be edit-recorded.
The tape is automatically forwarded to the position where the tracks can be recorded.

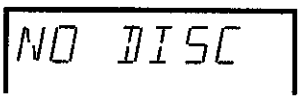


1 

Press MENU.

2 

Press CD.

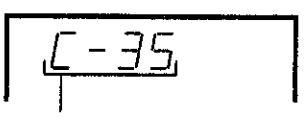


3

Press OPEN/CLOSE and install the CD.
Press the button again to close the tray.

4

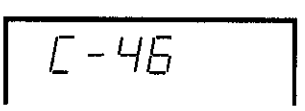
Press EDIT.
The length of tape required for all the tracks to be recorded now appears on the display.



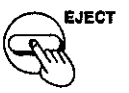
Lights.

5

Press − or + to indicate the length of the tape used.



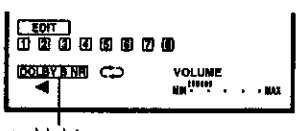
Use a tape which is longer than the CD's total play time.

6 

Press EJECT and insert the tape.
When the editing starts, the cassette deck automatically advance the tape to which the recording can be made.

7

Press DOLBY NR to set the Dolby NR system on or off.

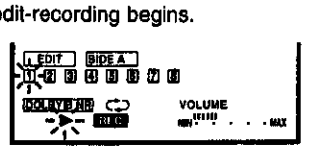


Lights.

This should be off when the recording is not going to be made using the Dolby NR system.

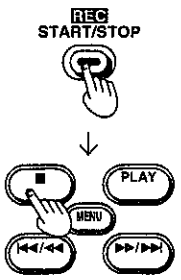
8

Press REC.
ATLS (see next page) starts automatically and when ATLS has been completed, edit-recording begins.



It takes a little while (approx. 70 seconds for a 60-minute CD) after the button is pressed for the recording to actually start.

Your attention is drawn to the fact that recording pre-recorded tapes or discs on other published or broadcast material may infringe copyright laws.



To stop edit-recording at any time:

1. Press REC.
   The CD play is stopped automatically as well.
2. Press ■ to indicate "CLEAR" on the display.

When edit-recording is completed:

Both the CD and tape stop automatically.
The LINK display indicates that tracks on another CD can be recorded on the remainder of the tape.
Proceed to step 2 on page 26.

To program and edit-record desired tracks only:

1. After step 3, press PROG. on the remote control unit.
2. Select the desired tracks using ▶▶| or |◀◀.
3. Within 5 seconds, press PROG. on the remote control unit and enter the programmed tracks.
   You can edit up to 18 tracks.
4. Perform steps 4 to 8.

What is the ATLS function:

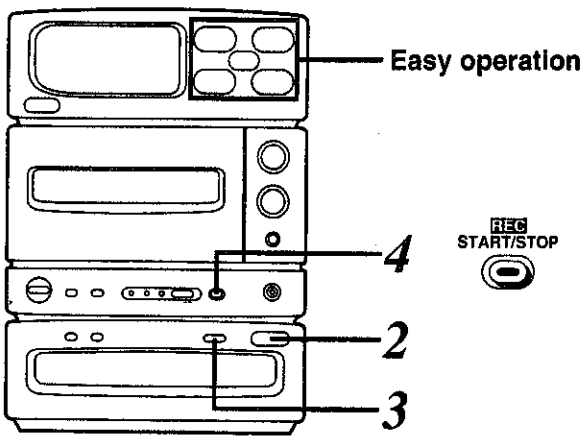
"ATLS" stands for Automatic Tape Level Setting, and it refers to the function which automatically sets the recording level. No sound is heard while ATLS is operating.

1. It scans the tracks on the CD and finds the point with the maximum sound level.
2. It sends the peak signal to the cassette deck section and automatically sets the recording level.
3. Recording now starts.

Notes

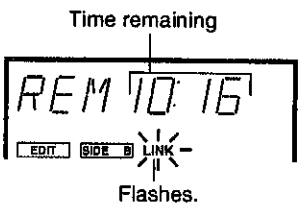
- Use a tape which is under 99 minutes in length. A long blank section may be left on the top side if a tape longer than this is used.
- It is not possible to edit-record the tracks on a CD containing 37 or more tracks. ("ERROR" display will appear.)
  In this case, record without edit function.
  (Synchro recording—see page 28.)

Editing a collection of CD singles on one tape (link function)



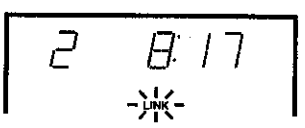
1 **Complete the edit-recording of the first CD by following the procedure on page 24.**

Check that the LINK display has appeared.



2

Press OPEN/CLOSE and replace the CD.

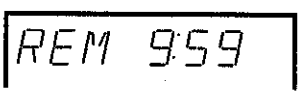


3

Press EDIT.

The remaining time will appear.

Do not press PLAY. When you press PLAY by mistake, record the 1st CD over again.



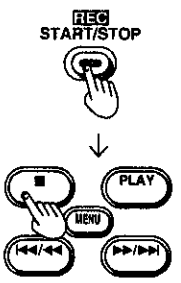
4

Press REC.

Edit-recording commences when ATLS has been completed.

5 **To record tracks from the third or subsequent CD:**

Repeat steps 2 and 3.



To stop the link function at any time:

1. Press REC.
   The CD play is stopped automatically as well.
2. Press ■ to indicate "CLEAR" on the display.

When "LINK" doesn't appear:

1. Press EDIT.
2. Press ■ to indicate "CLEAR" on the display.
3. Make an edit-recording from the first step.

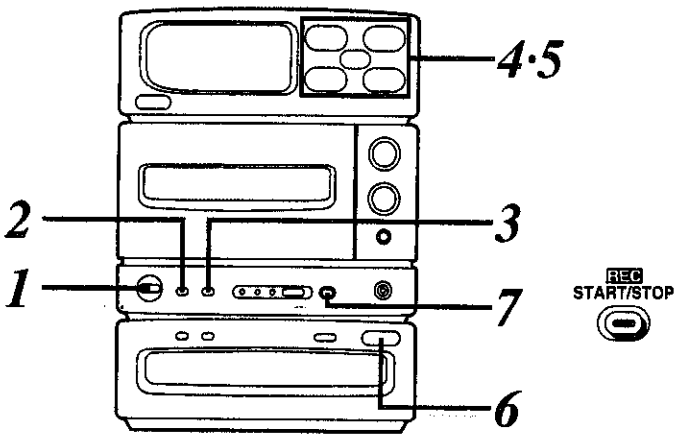
To program the desired tracks and link them:

1. After having edit-recorded the first CD, press OPEN/CLOSE and replace the CD.
2. Press PROG. on the remote control unit, and select a desired track using ▶▶| or |◀◀.
3. Within 5 seconds, press PROG. on the remote control to enter what has been programmed.
4. Press EDIT.
5. Press REC.

When "OVE" appears on the display during linking:

This indicates that the length of even the shortest track on the CD exceeds the remaining time on the tape.
Program a track which is shorter than the remaining time (see "To program the desired tracks and link them:" above), or press ■ to release the link function.

Recording without the edit function (synchro recording)



1 EJECT

Press EJECT and insert the tape.

2 DOLBY NR

Press DOLBY NR to set the Dolby NR system on or off.

Set this off when the recording is not going to be made using the Dolby NR system.

3 DIRECTION

Press DIRECTION to select the tape travel direction.

►: The tracks are recorded on the top side of the tape and then on its reverse side.

◄: The tracks are recorded on the reverse side only.

4 ■ PLAY MENU ◄◄ ►►

Press MENU.

5 TUNER CD TIMER AUX TAPE

Press CD.

6 OPEN/CLOSE

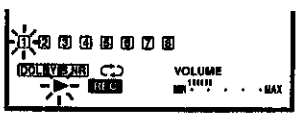
Press OPEN/CLOSE and insert the CD.

Press the button again to close the tray.

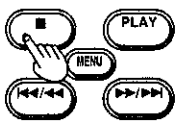
7 REC START/STOP

Press REC.

CD play starts automatically and recording commences.



To stop recording at any time:
Press REC.
CD play also stops automatically.



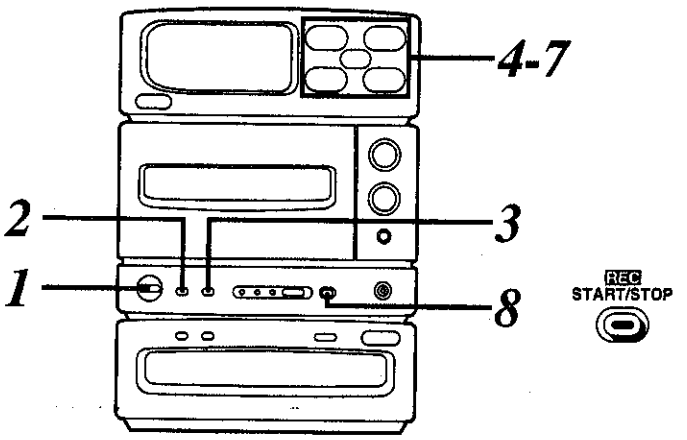
To create unrecorded intervals for search operations:
Press ■.

The cassette deck section creates an interval lasting for 4 seconds and then stops.

To program and record the desired tracks:

1. After step 6, press PROG. on the remote control unit.
2. Select a desired track using ▶▶| or |◀◀.
3. Within 5 seconds, press PROG. on the remote control unit and enter the programmed tracks.
   You can record up to 18 tracks.
4. Press REC.

Recording Radio Broadcasts

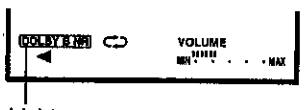


1 EJECT

Press EJECT and insert the tape.

2 DOLBY NR

Press DOLBY NR to set the Dolby NR system on or off.



Lights.

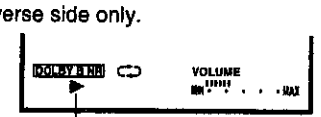
Set this off when the recording is not going to be made using the Dolby NR system.

3 DIRECTION

Press DIRECTION to select the tape travel direction.

►: The broadcast is recorded on the top side of the tape and then on its reverse side.

◄: The broadcast is recorded on the reverse side only.



Tape direction display

4 ■ PLAY MENU

Press MENU.

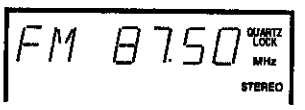
5 TUNER CD TIMER AUX TAPE

Press TUNER.

6 BAND MODE MENU

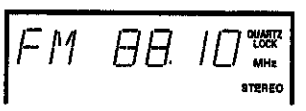
Press BAND to select "FM", "MW" or "LW".

Each time this button is pressed "FM", "MW" or "LW" is selected alternately.



7 BAND MODE MENU

Press ▼ or ▲ to tune in the radio station.



8 REC START/STOP

Press REC.

Flashes.

REC START/STOP

To stop recording at any time:

Press REC.

Eliminating unnecessary parts:
Press REC during the recording.

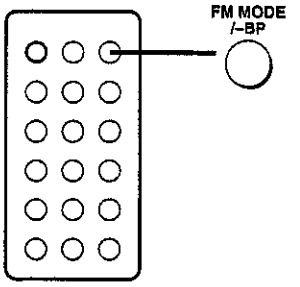
To resume recording:
Press REC again.

To erase a previous recording on a tape:
When a new recording is made on an already recorded tape, the previously recorded sound is automatically erased.

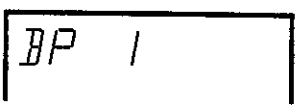
To erase all the sound on a tape:
1. Press MENU.
2. Press TAPE.
3. Press EJECT and place the tape in the holder.
4. Press DIRECTION to select the side of the tape whose sound is to be erased.
5. Press DOLBY NR to turn the Dolby system off (turn off the display).
6. Press REC.

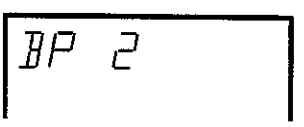
When noise interferes with MW or LW reception during recording

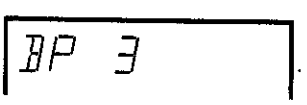
(Available only from the remote control)



Keep –BP depressed for about 3 seconds.







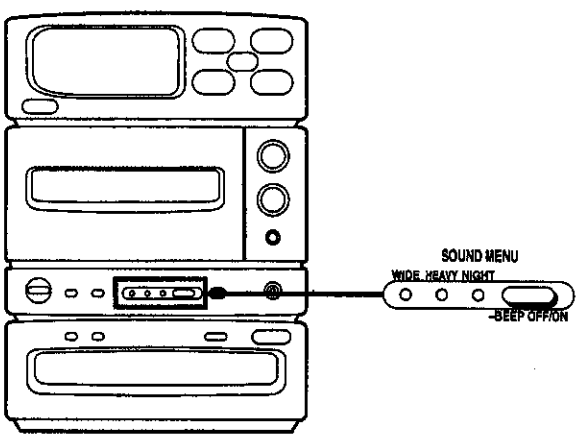
The position where there is less noise is selected.

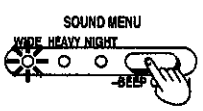
Changing the Tone Quality and Sound Field

"Sound field" refers to the combination of the sound (or tone) quality curve and surround effect. It enables you to fit your favorite music in with the occasion in your life.

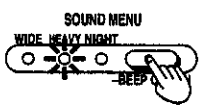
Using the sound field effects and tone quality curves

Three different kinds of sound fields and tone quality curves have been preprogrammed in the memory.
Press SOUND MENU to select a setting.
Each time this button is pressed, the setting is changed in the sequence of WIDE→HEAVY→NIGHT→light off (FLAT), after which WIDE is selected again, and so on.

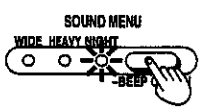




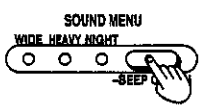
Select WIDE.
This creates a sound with a wide, far-reaching feel.



Select HEAVY.
This creates a heavy bass sound.



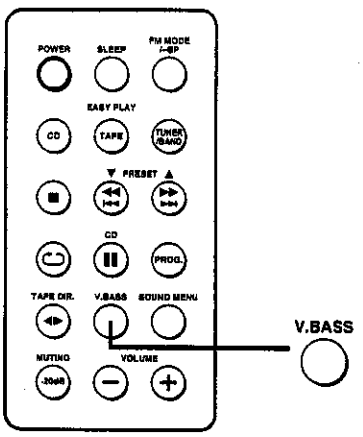
Select NIGHT.
This creates a sound with the same clarity at a high or low volume level.



To release any of these settings:
Press the button to light off the indicator (FLAT).

Boosting the ultra bass (V.BASS) sound

(Available only from the remote control)



V.BASS

Press V.BASS.

Lights.

V.BASS

To release:
Press the same button again.

Note

The ultra bass sound effect cannot be recorded. Its effect is added only to the sound heard through the speakers.

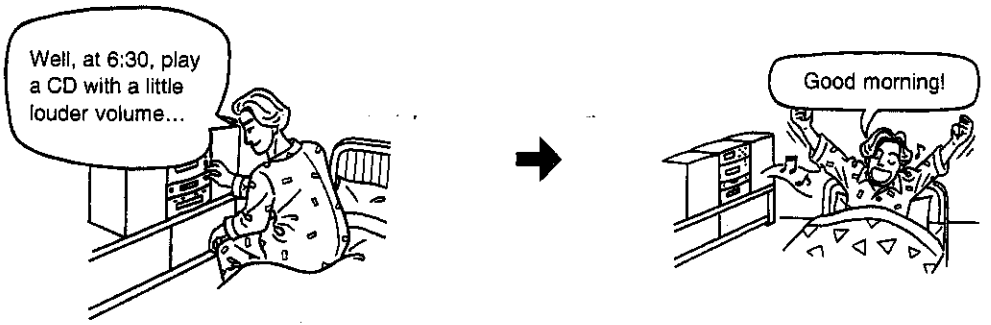
Before Using the Timers

First, complete the procedure given in "Setting the Time of Day" (on page 10).
The timers are used on occasions such as these.

Play timer (see pages 34–35)

Use this timer to wake up to the sound of music (CD, radio or tape) instead of an alarm clock.

The sound source of your choice is played at the selected volume at the assigned time.

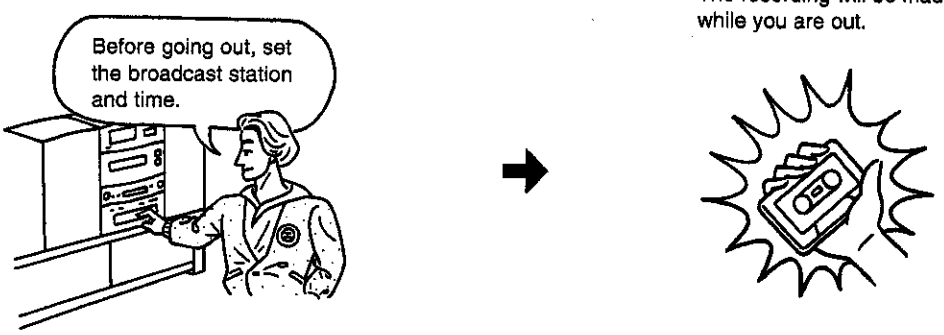


Record timer (see pages 36–37)

Use this timer to record radio programs aired while you are out or asleep.

The radio program you want to hear is recorded at the assigned time.

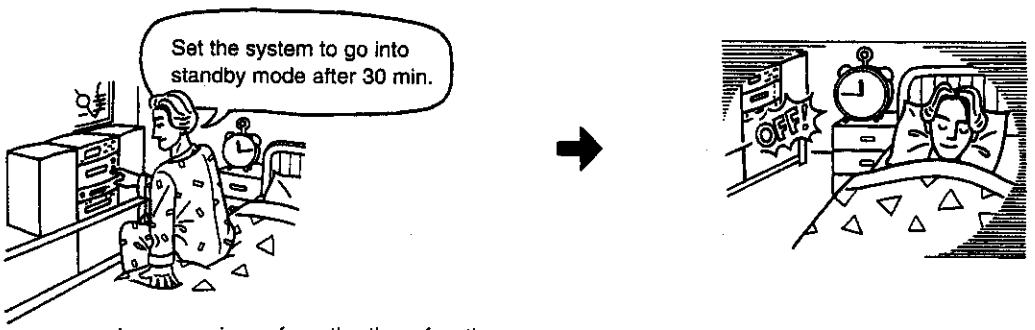
The recording will be made while you are out.



Sleep timer (see page 38)

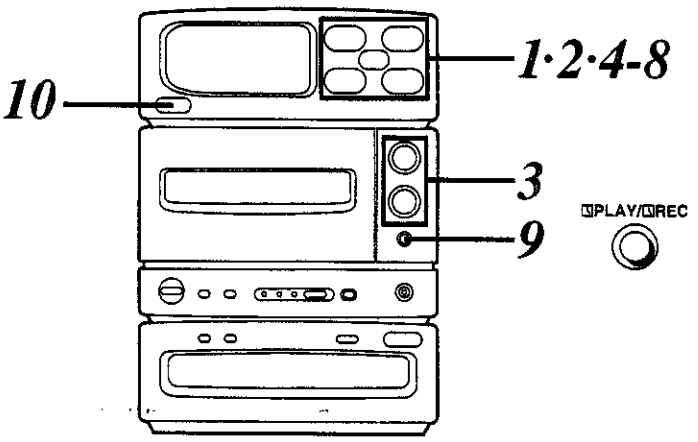
Use this timer to allow yourself to drop off to sleep while listening to music (CD, radio or tape).

The system will go into standby mode at the assigned time.



You can derive even greater convenience from the timer functions by using them in combination. (See page 39.)
You can fall asleep while listening to music and wake up to the sound of music the next morning.
You can fall asleep while listening to music and record a late-night program.

Using the Play-Timer



Example: Playing a CD at a −48 dB volume level from 6:30 to 7:40;

1 **Press MENU.**

2 **Select the sound source.**
- When you select CD: Install a CD (or tape).
- When you select TAPE: Install a tape.

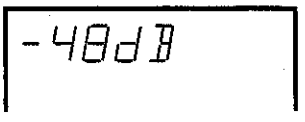
These steps apply only when the radio has been selected.

Press BAND to select "FM", "MW" or "LW".

Press MODE to select PRESET.

Press ▼ or ▲ to tune in the station.

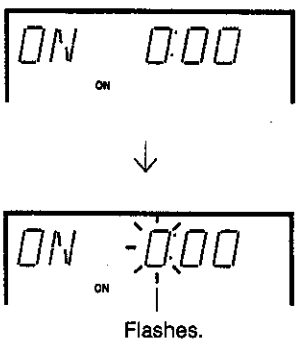
3 **Press VOLUME to set the volume of the sound you will be awakened by.**



4 **Press MENU.**

5 **Press TIMER.**

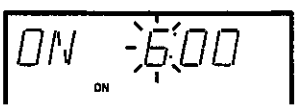
6 **Press MODE twice to display "PLAY" and then press SET within 4 seconds or so.**



Flashes.

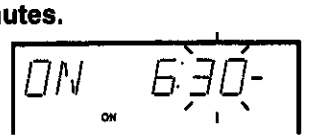
7 **Programming the play start (ON) time:**

① **Press ▼ or ▲ to select the hours.**

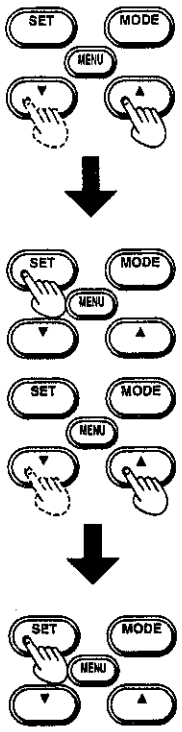


② **Press SET.**

③ **Press ▼ or ▲ to select the minutes.**

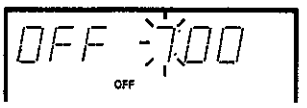


④ **Press SET.**

8 

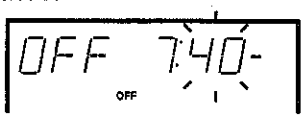
Programming the play end (OFF) time:

① **Press ▼ or ▲ to select the hours.**



② **Press SET.**

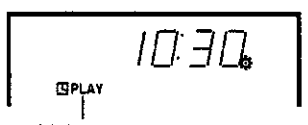
③ **Press ▼ or ▲ to select the minutes.**



④ **Press SET.**

9

Press PLAY/REC.



Lights.

Check that "PLAY" has appeared on the display.

10

Press POWER.

The sound is faded in and play starts at the programmed time.

To release:

(When you select CD or TAPE)

Press PLAY/REC once to turn off PLAY.

Each time this button is pressed, the display changes as follows:

PLAY → off

(When you select TUNER)

Press PLAY/REC twice to turn off REC.

Each time this button is pressed, the display changes as follows:

PLAY → REC → off

The timer does not operate but the programmed times will be stored in the memory.

To check what has been programmed: (Only when "PLAY" is on)

1. Press MENU.
2. Press TIMER.
3. Press MODE twice to display "PLAY".
   The start time, end time, source and wake-up volume level are displayed in sequence for about 3 seconds each.

To change what has been programmed:

Repeat the procedure starting with step 1.

When "PLAY" appears on the display, press PLAY/REC to go off "PLAY" on the display, and repeat the procedure starting with step 1.

To use the play timer with the same timer setting:

1. Select the sound source, and set the volume of the sound you will be awakened by.
2. Press PLAY/REC and appear "PLAY" on the display.
3. Press POWER and set the system to the standby mode.

To enjoy music or a program after programming:

1. Start playing the music or listening to the program after step 9. Even if the volume or sound source is changed, whatever has been programmed will be restored at the wake-up time.
2. After finishing with the music or program, press POWER and set the system to the standby mode.

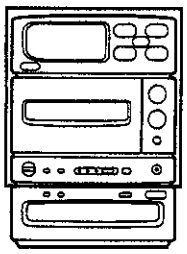
Notes

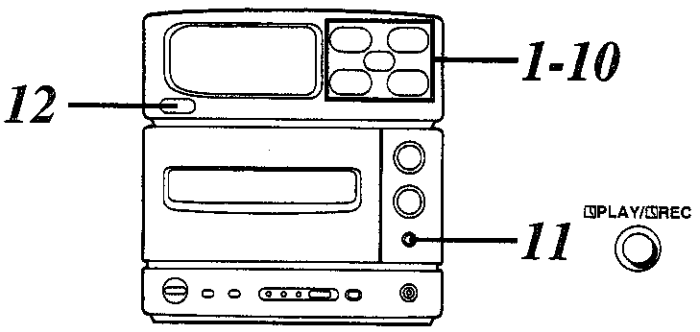
- The timer will not work if the power is kept on.
- When the power is switched to the standby condition during timer play, the play end time programming will be ignored even if the power is turned back on and play resumed.
- The play timer and unattended recording timer cannot be used in combination.

For your reference:

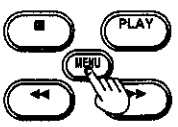
Unless it is released, the wake-up timer will operate every day in accordance with what has been programmed.

Using the Record Timer

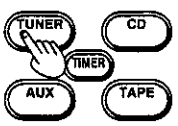




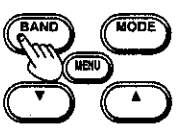
Example: Recording a program from a broadcast station stored in FM preset channel 3 from 18:30 to 20:00;

1 

Press MENU.

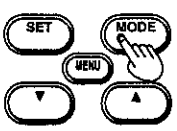
2 

Press TUNER.
- Install the recording tape.
- Select the Dolby NR position.
- Select the tape travel direction.

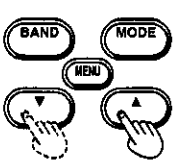
3 

Press BAND to select "FM", "MW" or "LW".

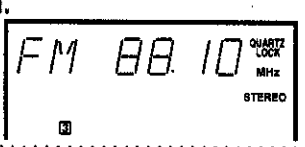
Each time this button is pressed "FM", "MW" or "LW" is selected alternately.

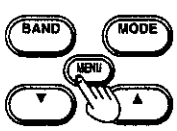
4 

Press MODE to select PRESET.

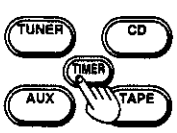
5 

Press ▼ or ▲ to tune in the station.

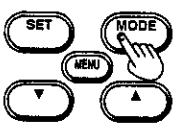


6 

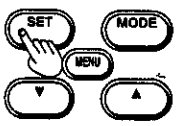
Press MENU.

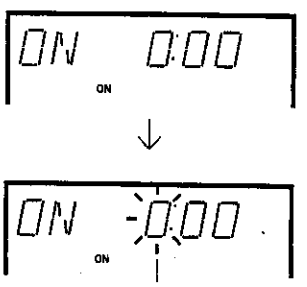
7 

Press TIMER.

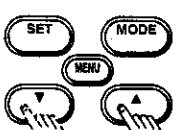
8 

Press MODE three times to display "⏲ REC", and then press SET within 4 seconds or so.



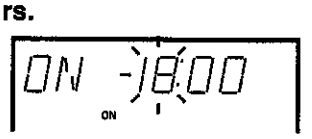


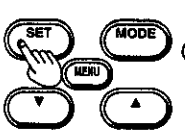
Flashes.

9 

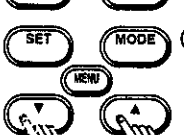
Programming the play start (ON) time:

① Press ▼ or ▲ to select the hours.

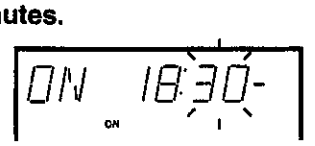




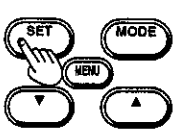
② Press SET.



③ Press ▼ or ▲ to select the minutes.

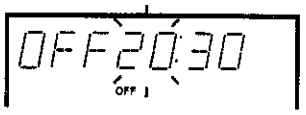


④ Press SET.



10 Programming the play end (OFF) time:

① **Press ▼ or ▲ to select the hours.**

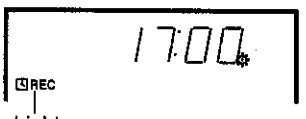


② **Press SET.**

③ **Press ▼ or ▲ to select the minutes.**

④ **Press SET.**

11 Press 🕒 PLAY/🕒 REC.



Lights.

Check that "🕒 REC" has appeared on the display.

12 Press POWER.

At the programmed time recording commences automatically with the sound muted. To hear the sound, press VOLUME.

To release:

Press 🕒 PLAY/🕒 REC once and turn off "🕒 REC".
Each time this button is pressed, the display will indicate the following;

🕒 PLAY → 🕒 REC
↑ ← off

The timer does not operate but the programmed times will be stored in the memory.

To check what has been programmed: (Only when "🕒 REC" is on)

1. Press MENU.
2. Press TIMER.
3. Press MODE three times to display "🕒 REC".
   The start time, end time and radio band are displayed in sequence for about 3 seconds each.

To change what has been programmed:

Repeat the procedure starting with step 1.
When "🕒 REC" appears on the display, press 🕒 PLAY/🕒 REC to go off "🕒 REC" on the display, and repeat the procedure starting with step 1.

To use the record timer with the same timer setting:

1. Select the band and desired preset channel, and set the volume of the sound you will be awakened by.
2. Press 🕒 PLAY/🕒 REC and appear "🕒 REC" on the display.
3. Press POWER and set the system to the standby mode.

To enjoy music or a program after programming:

1. Start playing the music or listening to the program after step 11. Even if the sound source is changed, whatever has been programmed will be restored at the unattended recording time.
2. After finishing with the music or program, press POWER and set the system to the standby mode.
   After listening to a tape, check that the recording tape has been installed in the holder.

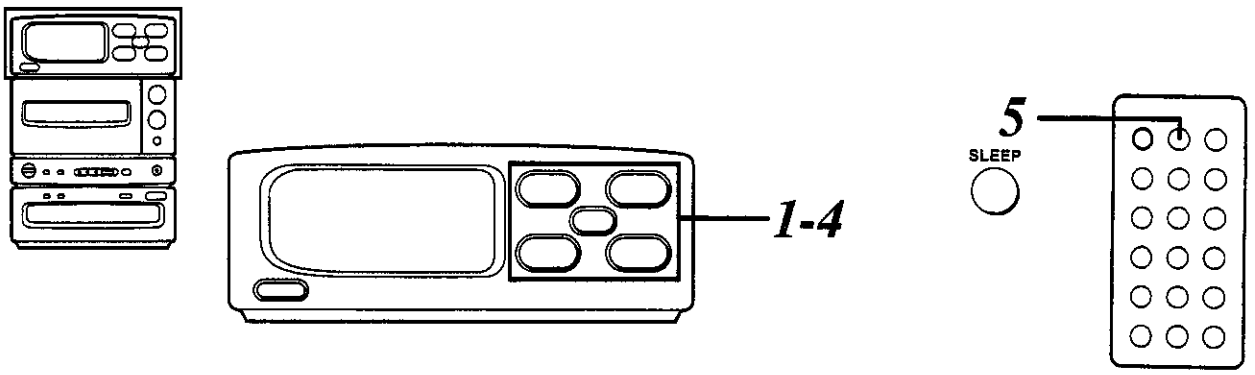
Notes

- The timer will not work if the power is kept on.
- When the power is switched to the standby condition during timer recording, the recording end time programming will be ignored even if the power is turned back on and recording resumed.
- The unattended recording timer and wake-up timer cannot be used in combination.

For your reference:

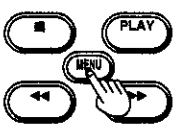
The record timer will be automatically cancelled after it has activated once.

Using the Sleep Timer

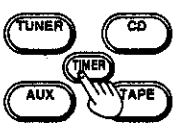


Example: Switch the system to the standby condition in 30 minutes;

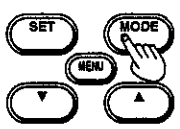
1 **Press MENU while listening to the sound source.**

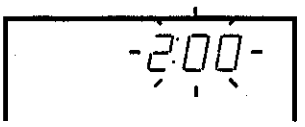


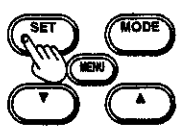
2 **Press TIMER.**



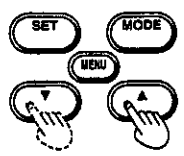
3 **Press MODE four times to display "SLEEP" and then press SET within 4 seconds or so.**

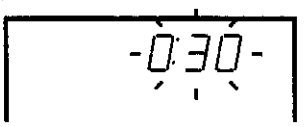




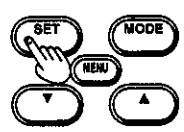


4 **Press ▼ or ▲ to select the desired time.**





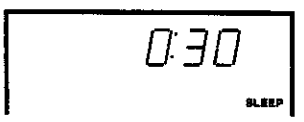
Press SET.



5

(Available only from the remote control)

Press SLEEP.
Check that "SLEEP" appears on the display.



To release:
(Available only from the remote control)

Press SLEEP to turn off "SLEEP".
The timer does not operate but the programmed time will be stored in the memory.

To change the time remaining during operation:
Repeat the procedure starting with step 1.

To use the timer with the same setting:
Press SLEEP on the remote control unit to display "SLEEP".

Using the Timer in Combination

To fall asleep while listening to an FM program and wake up to the sound of a CD the next morning (see pages 34–35 and 38)

1. Program the play timer (CD).
2. Tune in the station and adjust the volume.
3. Program the time at which the power is to be switched to the standby condition using the sleep timer.

To fall asleep while listening to an CD program and then record a late-night program (see pages 36–37 and 38)

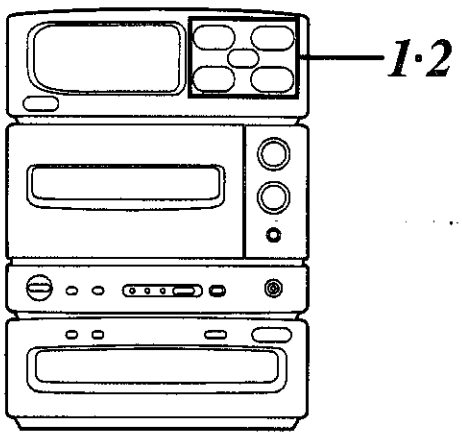
1. Program the record timer.
2. Play the CD and adjust the volume.
3. Program the time at which the power is to be switched to the standby condition using the sleep timer.
   (Make sure that the power is switched to the standby condition before the record timer is due to commence.)

Sequence of priority among the timers

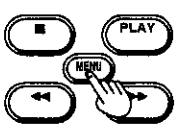
When the times programmed in the timers overlap, the sleep timer takes precedence over the wake-up and unattended recording timers.
Program the times so that they do not overlap.

Using the System in Combination with Other Units

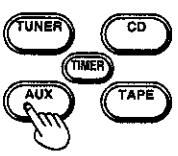
Enjoying the functions of other units



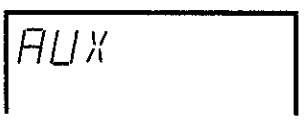
Example: Listening to records;

1 

Press MENU.

2 

Press AUX.

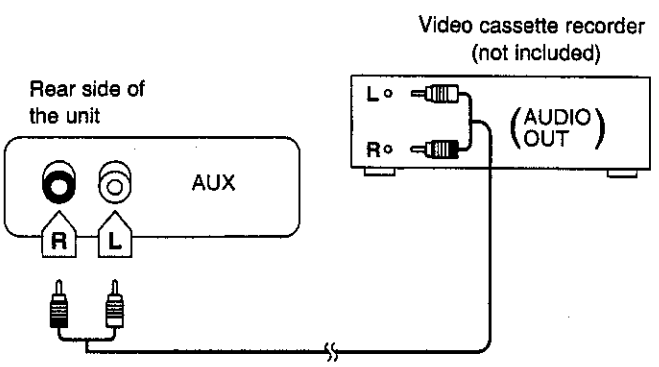


3

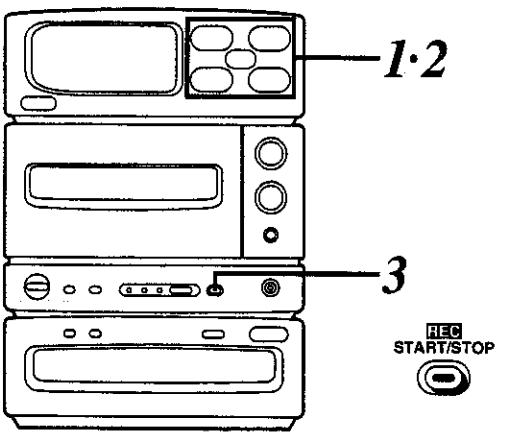
Start playing the sound source.
Refer to the Instruction Manual of the unit connected.

External unit connection:

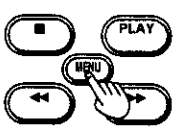
Connect an external unit, such as audio tape deck (for playback only) or output terminals of a VCR or TV (not included).



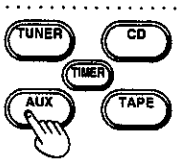
Recording the sound of another unit on the system's tape



Example: Recording records;

1 

First perform steps 1 to 3 on page 30, and then press MENU.

2 

Press AUX.

3

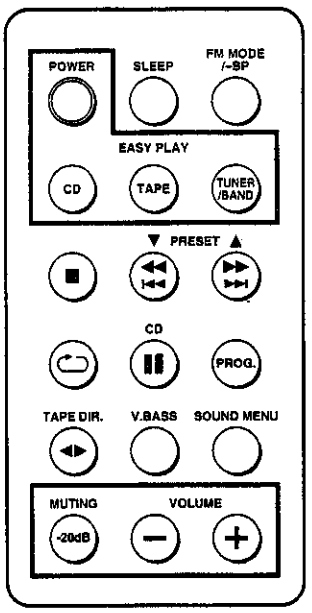
Press REC.

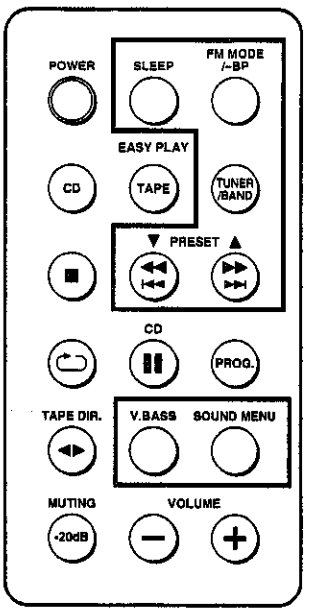
4

Start playing the sound source to be recorded.
Refer to the Instruction Manual of the unit connected.

To stop the recording:
Press REC.

Quick Reference of Remote Control Operations



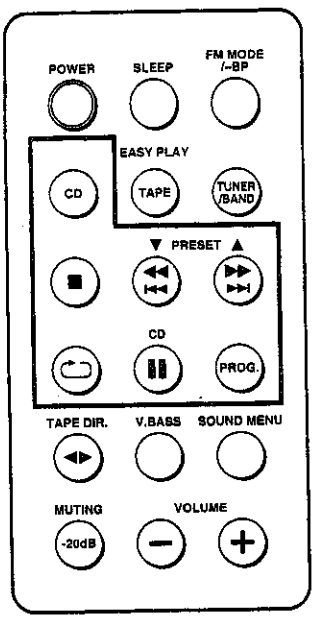


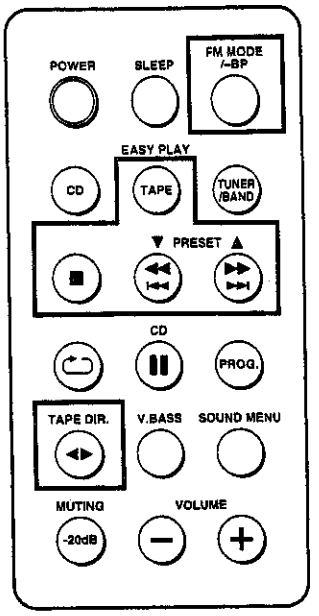
Common operation

(With standby mode) One-touch play	EASY PLAY CD TAPE TUNER /BAND
Switching the system on and power standby mode	POWER
Adjusting the volume	VOLUME
Muting the volume temporarily	MUTING -20dB

Radio/timer/tone quality & sound field

Radio program listening	TUNER /BAND → ▼PRESET▲
FM sound mode selection (Tap)	FM MODE /–BP
Sleep timer operation/release	SLEEP
Ultra bass sound boosting	V.BASS
Sound field/tone quality selection	Each time button is pressed, the setting is changed as follows: WIDE→HEAVY→NIGHT→light off (FLAT)→WIDE, etc. SOUND MENU





CD section

(With power ON) CD listening	CD
Pause	⏸
Play stop	■
Track skipping	CD → ⏮ ⏭
Skipping to the beginning of the forward/backward track	CD → ■ → ⏮ ⏭ CD (Within 5 sec.)
Play repeat (During or before play)	↻
Selected track programming and listening	CD → ■ → PROG. CD ← PROG. ← ⏮ ⏭

Tape section

(With power ON) Tape listening	TAPE
Tape stop	■
Tape side switching	TAPE DIR. ◀▶
Program search during play	TAPE → ⏮ ⏭
Fast forwarding/ rewinding	TAPE → ■ → ⏮ ⏭
Noise reduction during MW/LW recording (Keep button depressed for 3 seconds or so.)	FM MODE /–BP

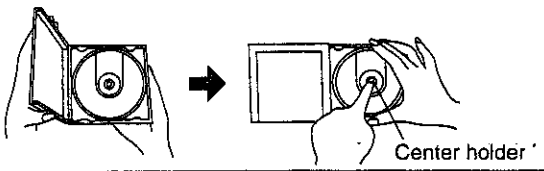
Concerning Compact Discs

Only compact discs having this mark can be used with this unit.

COMPACT disc DIGITAL AUDIO

To remove a disc from its case

Press the center holder and lift the disc holding by the edges.



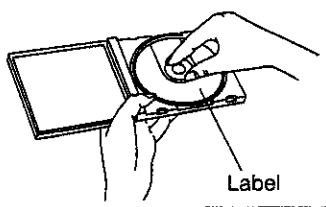
To hold the disc

Hold the disc by the edges so the surface is not soiled with fingerprints.
Fingerprints, dirt and scratches can cause skipping and distortion.

(Correct) O (Incorrect) ×

To store a disc in its case

Insert the disc with label facing upwards and press downward at the center.



If the surface is soiled

Wipe gently with a soft, damp (water only) cloth.

(Correct) O (Incorrect) ×

If the disc is brought from a cold to a warm environment, moisture may form on the disc

Wipe this moisture off with a soft, dry, lint-free cloth before using the disc.

Improper disc storage:

You can damage discs if you store them in the following places:
- Areas exposed to direct sunlight
- Humid or dusty areas
- Areas directly exposed to a heat outlet or heating appliance

Handling precautions:

- Do not write on the label side with a ball-point pen or other writing utensils.
- Do not use record cleaning sprays, benzene, thinner, static electricity prevention liquids or any other solvent.
- Do not soil with fingerprints.

Concerning Cassette Tapes

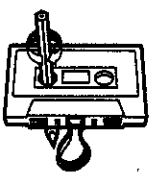
Selection of cassette tapes

Cassette tape exceeding 90 minutes:
These tapes are handy for their long playback and recording time but be careful about repeatedly stopping, starting, rewinding and fast forwarding these tapes in short intervals as they are thin, tend to stretch and may become entangled in the machine.

Do not use the Fe-Cr tapes (TYPE III) in this system:
If you use this tape, it is impossible to obtain the required flat frequency response.

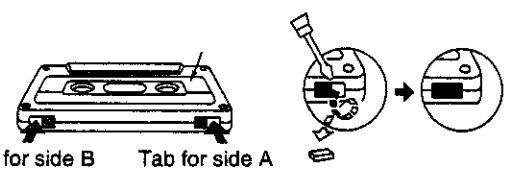
If the tape loosens, take up the slack

Tape slack may cause the tape to break.



To prevent erasure of recorded sounds

Remove the erase-prevention tabs with a screwdriver or a similar object.



Tab for side B Tab for side A

To re-record on a protected cassette, cover the slot with adhesive tape.

Adhesive tape

Do not cover the detection holes on chrome and metal tapes.

Improper tape storage:

You can damage tapes if you store them in the following places:
- In high temperature [35°C (95°F) or higher] or high humidity (80% or higher) areas
- In a strong magnetic field (near a speaker, on top of a TV, etc.) This can erase a recording.
- Areas exposed to direct sunlight

Maintenance

Maintenance of external surfaces

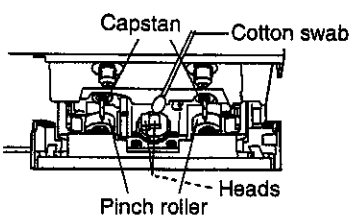
To clean this unit, use a soft, dry cloth.
If the surfaces are extremely dirty, use a soft cloth dipped in a soap-and-water solution or a weak detergent solution.

Wring the cloth well before wiping the unit.
Wipe once again with a soft, dry cloth.
Never use alcohol, paint thinner, benzene, or chemically treated cloths to clean this unit. Such chemicals may damage the finish of your system.

Tape head care

To assure sound quality for recording and playback, be sure to clean the tape heads after approximately every 10 hours of use.

1. **Press the power switch to turn off.**
2. **Press EJECT to open the cassette holder.**
3. **Clean the tape heads, pinch rollers and the capstan shafts with a cotton swab (or a soft, lint-free cloth) slightly moistened with isopropyl alcohol.**
   Do not use any solution other than alcohol for head cleaning.



Troubleshooting Guide

Before requesting service for this unit, check the chart below for a possible cause of the problem you are experiencing. Some simple checks or a minor adjustment on your part may eliminate the problem and restore proper operation.

If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, refer to the directory of Authorized Service Centers (enclosed with this unit) to locate a convenient service center, or consult your dealer for instructions.

Problem	Possible cause(s)	Remedial action
Problems common to entire system		
No sound when the power is ON	Sound volume has been set to lowest position.	Use the VOLUME buttons to adjust the volume.
Location of the sound is not well defined.	(+) and (−) connections to the speakers are reversed.	Connect the speaker cord correctly.
Left and right positioning of the sound is reversed.	Left and right connections to the speakers are reversed.	Connect the speaker cord correctly.
A low-frequency hum is heard during play.	AC power supply cord or fluorescent light is near a connecting cord.	Keep electrical appliances well away from the connecting cords. Try unplugging the AC power supply cord and re-connecting it with its polarities reversed.
Sound is heard only through one of the speakers.	One of the wires of the speaker cord is disconnected.	Connect the speaker cord correctly.
Sound suddenly stops during play.	(+) and (−) wires of speaker cord are shorted.	Switch the unit to the standby mode, connect the wires properly and turn the power back on.
Radio		
Noise interferes with stereo reception.	Transmitting station is a long way away.	Try using the TV antenna if the system's simple antenna is not adequate.
High noise level during stereo reception with occasional disappearance of sound	Unsuitable installation position or orientation of antenna.	
Stereo indicator is flashing.	Transmitting station is a long way away.	
	Power is being supplied to TV, video deck.	Trying turning off power to TV, video deck.
High level of distortion in stereo sound received	Buildings or mountains nearby.	Install a special high-sensitivity antenna and orient it in the optimum direction.
High level of noise during reception	TV is being used at the same time.	Switch off the TV or place it at a distance.
	Antenna cord is close to the power cable.	Run the antenna cord at a distance from the power cable.

Problem	Possible cause(s)	Remedial action
TV		
Picture occasionally disappears from screen or stripes appear on the screen.	Unsuitable installation position or orientation of antenna.	Change to an outdoor antenna if the system's simple antenna is inadequate. Place the system at a distance from the TV.
	TV's antenna cord is too close to the system.	Run the TV's antenna cord at a distance from the system.
Tape		
Sound is low or intermittent, accompanied by a great deal of noise, or is scratchy or unsteady.	Head section is dirty.	Clean the head section.
	Head section has become magnetized.	Use a head degausser available from an audio store to demagnetize the heads.
Sound is unclear and/or noise is heard.	The wrong Dolby NR mode has been set.	Use the same Dolby NR setting as that used during the recording.
Recording mode cannot be established.	Cassette's erasure prevention tabs have been broken out.	Adhere a piece of cellophane tape over the gaps left by the removal of the tabs.
CD		
Tray does not close even when a CD is installed and OPEN/CLOSE button is pressed.	CD is not installed properly on the tray.	Install the CD again.
Proper display does not appear when CD is installed. **Play does not start even when play button is pressed.**	CD has been installed upside down.	Install it again.
	CD is dirty.	Clean it with a soft cloth.
	CD is scratched.	Replace with another CD.
	CD is badly warped. A non-standard disc is being used.	
	Condensation has formed inside the disc player.	Turn on the power and wait about an hour before use.
Certain parts of the disc are not played properly.	CD is dirty.	Clean it with a soft cloth.
Remote control unit		
Remote control unit does not work.	The lithium battery has been installed with its polarities round the wrong way.	Install the battery with its polarity aligned properly.
	Lithium battery is flat.	Replace it with new lithium batterry.

Technical Specifications

(DIN 45 500)

■ AMPLIFIER SECTION

1 kHz continuous power output	
both channels driven	2×20 W (THD 1%, 4Ω) (at 240 V)
Total harmonic distortion	
half power at 1 kHz	0.09% (4Ω)
Input sensitivity	
AUX	250 mV
Input impedance	
AUX	22 kΩ

■ FM TUNER SECTION

Frequency range	87.50–108.00 MHz
Sensitivity	1.8 µV, IHF '58
S/N 26 dB	1.5 µV (40 kHz mod., 75Ω)
S/N	
MONO	70 dB (75 dB, IHF)
Image rejection at 98 MHz	40 dB
Alternate channel selectivity	±400 kHz, 50 dB
Stereo separation	
1 kHz	35 dB
Antenna terminal(s)	75Ω (unbalanced)

■ MW/LW TUNER SECTION

Frequency range	
MW	522–1611 kHz (9 kHz steps)
MW	530–1620 kHz (10 kHz steps)
LW	144–288 kHz (9 kHz steps)
Sensitivity (S/N 20 dB)	
MW (at 999 kHz, 1000 kHz)	500 µV/m
LW (at 216 kHz)	50 µV

■ CASSETTE DECK SECTION

Track system	4 track, 2 channel
Heads	
Record/playback	Permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erase system	AC erase
Tape speed	4.8 cm/sec (1⅞ ips)
Frequency response (at PHONES OUT)	
Normal	40 Hz–14 kHz (+3 dB, −6 dB)
CrO_2	40 Hz–14 kHz (+3 dB, −6 dB)
Metal	40 Hz–15 kHz (+3 dB, −6 dB)
S/N (CrO_2 type tape)	
Dolby NR off	52 dB (A-WTD)
Dolby NR on	61 dB (CCIR)
Wow and flutter	0.1% (WRMS)
Fast forward and rewind time	
	Approx. 110 seconds with C-60 cassette tape

■ CD SECTION

Sampling frequency	44.1 kHz
Decoding	16-bit linear
	Beam source/wave length
	Semiconductor laser/780 nm
Number of channels	Stereo
Wow and flutter	Below measurable limit
Digital filter	8 fs
D/A converter	MASH (1 BIT DAC)

■ SPEAKER SECTION

Type	2 way speaker system
Speaker(s)	
Woofer	14 cm active air coupling woofer; 14 cm passive radiator, 12 cm cone type driver unit
Main unit	8 cm cone type
Impedance	4Ω
Input power	60 W (music)/30 W (DIN)
Output sound pressure	77 dB/W (1.0 m)
Cross over frequency	220 Hz
Frequency range	38 Hz–22 kHz (−16 dB)
Dimensions (W×H×D)	165×250×195 mm
Weight	3.4 kg

■ General

Power consumption	86 W
	9 W (with standby mode)
Power supply	AC 50/60 Hz, 230–240 V
Dimensions (W×H×D)	180×245×272 mm
Weight	5.2 kg

Notes:

1. Specifications are subject to change without notice. Weight and dimensions are approximate.
2. Total harmonic distortion is measured by the digital spectrum analyzer.

MASH is a trademark of NTT.

For United Kingdom only:
This apparatus was produced to BS 800.

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